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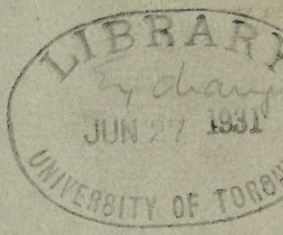
VOLUME XXXVI SEPTEMBER 15, 1931 NUMBER 3

PROCEEDINGS

OHIO STATE EDUCATIONAL CONFERENCE

ELEVENTH ANNUAL SESSION

THURSDAY, FRIDAY, AND SATURDAY
APRIL 9, 10, AND 11, 1931



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PROCEEDINGS OF THE ELEVENTH OHIO STATE EDUCATIONAL CONFERENCE

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VOLUME XXXVI SEPTEMBER 15, 1931 NUMBER 3

Proceedings of

THE OHIO STATE EDUCATIONAL CONFERENCE

ELEVENTH ANNUAL
SESSION

Edited by
Josephine H. MacLatchy

THE OHIO STATE UNIVERSITY
COLUMBUS . . . . . OHIO

TWELFTH OHIO STATE EDUCATIONAL CONFERENCE

KEYNOTE: EDUCATION A SOCIAL INVESTMENT

APRIL 7, 8, AND 9, 1932

Foreword

The teachers in the university and those in the public schools have a common meeting ground in their classroom and laboratory experiences. No more in the university than in the public school can a teacher be successful without skill, learning, personality, and affection for young life. If there is a difference in problems it is in degree rather than in kind. Consequently, a college of education devotes its energy and dedicates its program to development of proper conceptions of childhood and youth and the realization of youth's uttermost possibilities. We are experimenting in the training of teachers, and we trust that all teachers are constantly experimenting in their classrooms.

About the time we are feeling smug and well settled in our teaching practices something occurs to give us a rude unsettling, and another era of experimenting begins! But through our striving for excellence and shifting of the emphasis some anchors remain firm: sympathetic understanding of youth, an abiding vision of its endlessly varied possibilities, responsibility for wise and stimulating direction, and a deep sense of the sacredness of the individual—all these are always and everywhere the characteristics of the true teacher. Training is superposed and is resultful only when they are present.

The program of the Eleventh Ohio State Educational Conference was organized to emphasize again these elements in new ways and altered combinations. Our perennial purpose is to present topics and speakers to elicit your enthusiasm, to contribute to your enduring interest in school work, and to stir within you a spirit of rededication to the service of discovering and developing the powers of youth.

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GENERAL SESSIONS

Liberty, Learning, and Democracy

By JAMES R. ANGELL[1]

FOR A CENTURY AND A HALF the gospel of political liberty has swept like a great wind over the whole surface of the earth. In its path kingdoms have collapsed and empires have gone down into ruin. Beginning with the American and the French Revolution, the movement finds in China and Russia its latest and most equivocal expressions, with India just about to join the group. Accompanying these contemporary crises has come a clamorous demand, the world around, for such freedom in personal conduct as would, to an earlier day, have seemed sheer license. Meanwhile, the flames of reaction are already spreading, and Italy is not the only land where personal liberty, as understood by folk of our stock, has apparently suffered an eclipse.

Our prevailing conceptions of liberty are, naturally perhaps, largely political in character. They derive from the philosophy of John Locke and the Declaration of Independence, concerning themselves with freedom from restraint by crown or commonwealth in the ordinary pursuits of life. Of late, these conceptions have been compromised by the claims of occasional moral freebooters to do what they like, where they like, when they like, being governed solely by the dictates of passion and the exigencies of circumstances. Only by remote inference do such conceptions touch the far more fundamental and essential ideals of that freeing of the spirit which flows from the full cultivation of one's powers of thought and feeling and character —that finest of the fruits toward which all liberal education is directed. Nor should it be forgotten that in his effort to obtain moral and intellectual liberty, man is at best gravely handicapped by prejudice and passion not of his own seeking, by the mores of his group which narrow his horizon, and by the limitations of his mind and body which set relentless bounds to his possibilities of achievement.

The critics of our age are wont to inveigh against its blatant vulgarity, its crass materialism, its spiritual poverty, its ignominious acceptance of moral compromise, its fatuous self-complacency, and its soul-destroying absorption in soft creature comforts, in luxury,

[1] Yale University.

and the lures of economic prosperity. There may be more than a shred of truth in such indictments. Certainly, bodily comfort and freedom from acute physical anxiety, such as our nation so largely enjoys, act as potent sedatives upon the spiritual sensibilities of most people and sap their enthusiasm for moral crusading. If necessity has not always been the mother of invention, it has at least been a fruitful generator of human energy, and many a man has been led to think seriously upon life and its meaning by the pricks and stabs of ill fortune and disaster. The present period of economic depression has certainly done much to sharpen again our sense of national responsibility for the welfare of our neighbors. Nor can one vigorously gainsay the charge of vulgarity. It flaunts itself in every public place. Any metropolitan news stand will give food for humiliating reflection on our national taste in letters. Gentle manners, good breeding in the earlier sense, are sufficiently rare to stand out conspicuously and gratefully when encountered.

Our self-styled intelligentsia are doubtless widely infected with a materialistic philosophy, and it is but too obvious that commerce, industry, government, and private life would all be instantly at a standstill were the mechanical devices upon which we so largely depend to be suddenly withdrawn. Materialistic in a shallow sense, perhaps we are. Certainly our civilization rests on machines to a degree hitherto unparalleled in history. But, such as it is, our age is the unquestioned child of a liberty more complete, for the masses at least, than any previous epoch has known. If it be unsound at heart, the supposed virtues of liberty may well be thoughtfully scrutinized. In what sense and to what degree is such liberty and the democracy which is ostensibly based upon it dependent upon education, and what does such education include? Clearly much more than the schools.

When we speak of education, we naturally think of schools and colleges and universities—and this is perfectly natural. But education, fortunately or otherwise, goes on through many other agencies. The family, the church, the theater, and especially the radio and the movie, the playground, the farm, the factory, the shop, the store, the bank—through all these agencies our people, young and old alike, are being educated, and educated in ways which not only affect the inner fabric of their intelligence, but also fundamentally affect their character. To be sure, it is in the school that we are dealing with human nature at its most plastic period, and it is in the school rather than in any other one agency that the community is giving its explicit stamp of approval to the instruction which is being imparted. Clearly, however, one would be ridiculously shortsighted were he to overlook

the educational effects, often such as tend to nullify the work of the school itself, of certain of these agencies to which reference has been made. Of what avail is it for the school to attempt to impart ideals of decency and the ambition for noble achievement, if the theater and the movie, which in the nature of the case appeal tremendously to feeling and to sentiment, are undermining this teaching and replacing it with one of an exactly opposite character? I do not say that this always or even frequently occurs, but I am sure that it does occasionally. Moreover, of what avail is it if the school insists on the integrity of intelligence and the obligation to face one's own problems and think them through honestly in the light of the best knowledge one can command, if in other influential places there is being taught blind obedience to a dictatorial authority? Again I do not allege that this is commonly the case; but it certainly occurs, and when it does it inevitably occasions tension and unrest in the mind of the pupil. I will not carry the illustration further. Your own imagination will suggest abundant other examples.

Basic to the whole issue are the processes whereby knowledge is produced and then distributed, and especially such knowledge as may prove useful. To be sure all knowledge is potentially useful. The seemingly trivial and insignificant of today may become the indispensable of tomorrow. Nothing better illustrates this fact than Franklin's early observations upon electricity, which were originally regarded by most of his contemporaries as curious and amusing but not likely to result in practical consequences of importance. The present day is justly enough spoken of as the electrical age, and the useless has become the invaluable.

The typical scientist is far more concerned to discover truth and to provide reliable criteria for its establishment and verification than to secure its general dissemination. In the long run, this is doubtless a desirable attitude to encourage, but society is profoundly interested in the distribution, as well as in the production, of knowledge, and not less in protecting its members from the false and specious, tricked out as knowledge. Quackery is by no means confined to medicine, nor are all of its most insidious evils to be found there. It is abroad in business, in industry, in political doctrine, and no area of human interest is wholly exempt from its incursions. It is incumbent on the intellectual leaders to study this problem with every energy.

While as a people we have, in general, a well-grounded aversion to censorship, we must nevertheless recognize that modern technology has put at the disposal of irresponsible persons agencies for reaching the public mind such as no previous generation has known, and if these agencies may be employed, as they occasionally are, for the

dissemination of grotesque falsehood as well as of established truth, the public cannot be wholly oblivious to the consequences of this fact.

It has been truly said that the perfection of printing worked a revolution in the intellectual world. The perfection of radio and other electrical methods of communication is working an equally radical revolution. One need not be literate to hear over the radio an exposition of any subject whatever, and the effects of grossly misleading statements on matters of practical moment when thus absorbed by immature or ignorant minds cannot be easily evaluated, but must be seriously harmful.

The newspaper press, the radio, the moving picture, the magazine, and the book are the great means in our time of creating general social attitudes and of promoting general knowledge. The schools, the colleges and universities, the learned societies, give us the bedrock on which the larger part of what is enduring in all this process must be built. The church and the lecture platform also no doubt play an important part, but, over the area of knowledge as a whole, probably far less than those agencies previously mentioned.

The only kind of control in this matter which can be counted upon to work is the power of truth to overcome error. But to accomplish this, we must rely ultimately upon the slow effects of education, education which shall in early childhood create a keen sense for the difference between knowledge and opinion, between demonstrable fact and sentimental or partisan desire, and an education which shall provide opportunity and inducement for men and women to continue their intellectual development and training throughout life, rather than leave it behind as finished and complete when the school or college gate clangs behind the outgoing graduate. This proposal implies educational agencies of a kind materially different from most of those which we have developed in this country, although practically all of our existing educational institutions could be knit into a general system of continuous adult education which would function as suggested. Whether it be done through the state or by private initiative, or both, there must be provision for the widest and most authentic possible dissemination of knowledge and that, too, of knowledge in all fields—not solely knowledge of physical science and technology and agriculture, important as these are, but also knowledge of social, economic, historical, political, and ethical principles, with provision as opportunity offers for the cultivation throughout the entire community of taste and judgment and enjoyment in literature and the arts.

This is a large order, but anything less will leave us exactly where we are today, with highly imperfect methods for the promotion of

sound knowledge and with lamentable inability to offset the too often cheap and fallacious material being poured out upon the people through the existing channels of publicity. The responsibility to think and act upon these problems devolves upon every intelligent person who desires to forward a saner and happier society, to see truth setting men free—and this particularly in the greatest democracy which history has known.

Broadly speaking, such a program demands the constant development of sound scholars and, at the same time, the wide dissemination of a more acute and discerning appreciation of, and respect for, the results of scholarship.

Our own day and generation presents, particularly in the Western Hemisphere, an unparalleled combination of circumstances, certain of which, taken in isolation, might have been expected to lead to the development of an extraordinary richness of scholarly achievement, others of which have clearly and for obvious reasons been hostile thereto. On the one hand, there has been confronting our own immediate forbears during the last three centuries the tremendous tasks of the mastery of a virgin continent and the creation of a great nation. In the nature of the case, these enterprises have drained by far the larger part of the vital energies of the race engaged upon them, and they have in large degree been unfavorable for the quiet and detachment required for study and reflection and the attainment of the peculiar surroundings requisite for the growth of learning and scholarship. Pioneering, whether on the geographical frontiers or in industry or in commerce, is not, as such, congenial to the cultivation of the scholar's interests. Indeed, the two are almost inevitably mutually exclusive.

On the other hand, we have in the last half-dozen decades been living in an era of unprecedented expansion in man's knowledge of the physical universe and its laws. It is difficult to pitch upon metaphors which really exaggerate the relative advance in all these matters in the last century, as compared to the entire preceding history of man. In the final analysis, these amazing accomplishments have been based upon the patient and indefatigable labors of men working in laboratories and libraries and immediately among the phenomena of Nature herself. So far as concerns the order of intelligence involved, the victories of these scientific pioneers are properly to be ranked among the greatest achievements of human thought, and, in many respects, they belong unequivocally to the enduring chronicles of scholarship.

But while they have generated in the scientific world and those affected by it a profound respect for facts and the search for facts and

for the practical human advantages which have arisen from the skillful manipulation of these facts, they have not resulted to any such degree as might have been anticipated in the public esteem for scientific methods merely as such, and much less for learning in any large and inclusive sense of the term. The reasons for this result are in some respects a trifle obscure, but in other regards are perhaps obvious enough.

The uneducated and illiterate person who sits down to listen to music or oratory or what you will, coming in over the radio, is inevitably wholly unfamiliar with the many years of prolonged investigation of the fundamental phenomena of electricity and radiant energy in all its forms, and is entirely devoid of any real understanding of even the most basic of the physical facts on which depend his enjoyment of the moment. The same thing is true of almost all those mechanical conveniences upon which rest so much of the daily life of our communities. Transportation; communication; the growth, preservation, and preparation of foods; the safeguarding of water supply and of public health—it is difficult to mention even a single aspect of our contemporary life which is not debtor to the achievements of our scientists, working through long years and in the face of often utter discouragement to achieve the final success, which is now translated into our most commonplace daily comforts. But between the unlettered consumer and the learned scientist there is a screen of intervening circumstance which robs the former of any sense of the contribution of the latter and, as a consequence, deprives him of any possibility of a just comprehension of the scholarly basis of his own possessions.

To mention no other factors, those which have been indicated may suffice to suggest why, despite the scientific foundations of our western life and civilization, there is still so general obliviousness to the part played by scholars and scientists in its creation.

When one superposes upon these influences the by-products of the incessant "speeding up" of modern life, it becomes entirely easy to understand why the superficial and the vulgar—in the true etymological sense of the term—and the unscholarly are so universally prevalent, why the accent falls almost exclusively upon wealth and material possessions and the restless activities which they generate and exploit, and so little upon those quieter and less obtrusive pleasures of the intellect which one sometimes fears are becoming wholly extinct. To explain an undesirable condition is not to indorse it or to suggest one's satisfaction with it. But it is a first step surely in a just evaluation of the entire situation and certainly an indispensable step if one proposes any basic modification of it.

It would not be just to pass over this indictment of the current lack of public esteem for scholarship and learning without paying one's respects to the conditions which have so largely existed in our schools and colleges. Here also, certainly until quite recently, if it be not even now the general fact, there has been in the student body as a whole an extremely tepid interest in learning for its own sake. I do not pause to attempt an allocation of responsibility for this circumstance, as it affects the general public, the parents, the students, the faculties, and controlling boards of our institutions. Probably all are in some degree at fault. I am, for the moment, concerned simply with the actual situation as this appears to the average observer. I firmly believe that conditions in this respect have been materially improved in recent years and particularly in certain institutions, but it is still too largely the fact that the average high-school or college student regards the classroom work as the price to be paid, not very high to be sure, for certain incidental advantages of a highly interesting character which flow from the academic experience, some of which may later be converted into coin of the realm. If the classroom work happens also to be of interest, all the better; but still this is often the unpalatable bitter which has to be accepted in order to secure the capricious sweet that accompanies it. A moderately respectable intellectual achievement, as this is determined by the edict of teacher or professor, is of necessity maintained as the price of remaining in the school or college at all, but, beyond this, many students are not disposed to go, preferring to give their residual time and attention to any one of the thousand-odd student enterprises sardonically known as "student activities." One would not speak disparagingly of these enterprises *en masse*, although some of them are trivial to the point of complete banality; but certainly they often cast a heavy shadow over the supposedly intellectual business of the institution, and because of the social prestige which accompanies distinction in them they make a far greater appeal to the rank and file of American students in non-professional institutions than do the allurements of sheer intellectual achievement inside the walls of the classroom, the library, and the laboratory. One must therefore deal indulgently with the outside public in the failure to find in that group enthusiastic appreciation of learning, so long as our educational institutions are themselves in any measure justly subject to criticisms such as I have voiced.

From the social point of view, however, the matter takes on an entirely different aspect. No social group can expect to maintain the intellectual advances of its forbears, much less to achieve any substantial progress in the things of the mind, which does not provide

a place for, and accord substantial recognition to, the function of learning and the teacher. It is through such scholarship that, in the last analysis, we must expect to unravel the tangled skein of history and pre-history and arrive at an approximately just understanding of our human past. It is through the labors of the scholar that we must expect to have accurately preserved, and correctly interpreted, the whole mass of the cultural achievements of our own and other times. It is through the scholar as scientist that we are to look for the progressive and increasing mastery over ourselves and over nature. The scholar is the guardian of the sanctuary of truth, which without his constant surveillance tends to fall into decay and to suffer corruption. The scholar is therefore no sheer luxury of effete and sophisticated civilizations, much less of our own. He is rather the indispensable element in its preservation against the ever fresh assaults of ignorance, bigotry, and cultural prejudice. That certain of the practical affairs of life, such as the professions and the applied sciences, involve a large draft on accumulated knowledge and therefore upon the resources of scholarship is a fact, and an important fact, in the stability of our civilization. But it is a far deeper and more pervasive function than this that scholarship really subserves, in that by its cultivation our critical acumen in distinguishing truth from error and the more basic and significant aspects of truth from those of a more superficial or ephemeral character is constantly enhanced; and, while there is always some chance that scholarship may become cloistered and unhealthily remote from the market place and the common affairs of daily life, this is only harmful when it has, as a result, the distortion of the fundamental truths which are always and everywhere the ultimate human justification of the scholar's career. Indeed, many of the more subtle and precious of the forms of scholarship can only be carried on under such conditions of quiet and detachment as are to be obtained by complete insulation from the noise and hurly-burly of the forum.

The place of the trained intelligence in a democracy is peculiarly crucial and significant. James Russell Lowell once said: "Democracy must show a capacity for producing not an higher average man, but the highest possible type of manhood in all its manifold varieties, or it is a failure. No matter what it does for the body, if it does not in some sort satisfy that inextinguishable passion of the soul for something which lifts life away from prose, it is a failure." Thoughtful observers are all agreed that no democracy can long survive in which the average citizen is not disciplined in the use of his intelligence and that none can come to great power and enduring distinction which does not choose its ablest minds as its leaders. It is to achieve the

first result that we build our schools and train our teachers and compel our children to undergo some minimum at least of the educational process. The broadest and most searching training of the best minds will only occur in a community which understands and values sheer intellectual achievement. Such achievement will never be easily, or often, attained, save where scholarship is fostered and flourishes, and where freedom to discover and publish truth is unfettered. Whether democracy will be as discerning in this matter as the more judicious monarchies have shown themselves remains to be seen. But, with the passion for education which characterizes our American people, it would be tragic if learning and knowledge did not ultimately come into their own, and it is surely the duty of every discerning person to promote a full and sympathetic understanding of the scholar's incomparable service to human society in the promotion of these ends.

A democracy must unquestionably give educational opportunity to all. But it must then protect itself by rational and courageous methods of selection against the endless exploitation of its generosity by the unfit. It must through educational means generate a recognition of, and respect for, competent leadership, distinguishing sharply between this and mere demagogic smartness. It must create in the wisest and best educated a sense of civic and political obligation. As Lord Bryce once said: "Knowledge is one only among the things which go to the making of a good citizen. Public spirit and honesty are even more needful."

In all this matter the function of the teacher is obviously fundamental. Often ill trained, generally underpaid, and in the lower branches immature, the teacher is nevertheless the indispensable agent through whose devoted service the larger part of this great task is to be accomplished; and to the juster recognition by the public of the dignity and importance of this service we may well lend our active efforts.

At the top of the educational scale in the university, the teacher and the creative scientist or scholar are often one. And the same function of productive thinking may occur at any level of our academic organization. But in the lower ranks the teacher's essential work becomes increasingly that of stimulating intellectual interests, of assuring the mastery of accurate information, of strengthening the powers of discernment and trustworthy inference, of generating respect for the might of knowledge and truth and the irrepressible power of ideas, of assisting in the appreciation of beauty and in the cultivation of taste. Truly a staggering task, taken *en masse* one of the most stupendous that men can be called upon to execute, but one which rightly conceived brings with it rewards of the highest

human value, and fortunately perhaps one which in the day's work for the particular teacher largely resolves itself into a series of routine duties. If, however, the routine ever completely screens and obscures the larger vision which we have sketched, then instantly vitality is lost to the task, and, in place of fresh human contribution, there comes the dead lockstep of the mechanical treadmill, a tragedy for all concerned and one against which teachers and administrative officers alike must be alert to fight.

If the greatest experiment in self-government ever undertaken by man is to avoid the pitfalls of pervasive vulgarity and meretricious ignorance masquerading as sophisticated intelligence, if it is to survive the sinister influences of political corruption and commercial greed, if it is to come into its heritage of great intellectual and spiritual achievement, which shall furnish the indispensable counterpart and complement to its unprecented material accumulations, it is chiefly to education that we must look, an education whose development will call for all those human qualities of courage and vision and self-sacrifice which we justly esteem most highly. We may well pray that we be not found wanting in this supreme test of our national life.

Adult Education

By NEWTON D. BAKER[2]

I WANT HUMBLY TO SUBSCRIBE to all that President Angell has said about the place and dignity of the scholar. I think some of that dignity has abated in the public esteem since I was a boy, not merely for the teaching profession, but for all of the so-called "learned professions." The opportunities of industry and of business have drawn away a good many men who, but for those opportunities, perhaps, would have themselves been teaching. The success of those men in the industrial, commercial, and financial fields has drawn public attention away from the scholars, and the necessary and often brilliant work which the teachers in our universities, colleges, and secondary schools are continuing to do. It delighted me, therefore, to have this great high priest of education, as the President of Yale always must be, assert boldly that the scholar still deserves the good opinion and the high esteem of his generation.

For my own part, I am going to discuss "Adult Education." I shall probably approach it in a roundabout fashion, for, first I want to propose a simple question: Why educate at all? Just what is it

[2] Cleveland.

that makes us want to educate our fellowmen and to live in an educated society? A little later I shall ask another question regarding the kind of education. The two questions are related, and to give my answer to them, I must, to some extent, describe the use which is now made of education in work. At the present moment, I suppose every thoughtful man and woman in the United States is interested in Russia, the country about which we think the most and know the least, the country about which it is almost impossible to think without passionate prejudice, the country in which, as we know, there is going on one of the most tremendous economic experiments that has ever been tried by man on the globe. I suppose I have the common attitude toward Russia. It seems to me a rational one. In my own judgment the Russian experiment, as it is being tried, cannot possibly succeed for the reason that, as yet at least, it has put too much accent on man as a purely economic animal. There does not seem to be much difference between a hungry man and a hungry horse. Until their respective hungers are appeased neither can think about anything else, but as soon as they are both well fed the difference begins to appear. The horse stops thinking, but the man goes on.

Now the Russian experiment, as I have learned by trying to understand it, seems to proceed on the theory that everything in Russia will be all right if everybody in Russia is well fed in the most extravagant sense. Therefore, their civilization has not merely placed the accent upon a new economy, but every other thought has been brought into disrepute; religion, and to some extent art, most of the amenities of life, things that we think of as cultural and humanitarian are, if not abandoned, at least almost disregarded. They are buried under a passionate outburst of national emotion concentrated upon an improved technology and a new economic program. Now it may well be that when the Russians get well fed they will start to think about other things too. Man does not live by bread alone. And it may well be that when this exclusive emphasis upon the economic situation of the Russian people has worked itself out, when Russia has set up factories and taught her people how to produce in mass production, when there is a surplus of the material necessities of life which are at present their exclusive aim, it may well be that when that time comes there will be a rebirth of the exquisite impulses toward art and life and letters which was the redemption of autocratic Russia, if anything could have redeemed so stupid a régime.

We are going to learn something from Russia, however, whether she succeeds or whether she falls. I have believed for a long time that a modified capitalism was philosophically the best form of organization for an industrial society. How much modification our present

capitalism may need, and how much it may get, I am not prepared to say. I do not believe that it will ever be modified into communism as they are experimenting with it in Russia, but I do think we shall learn some things from the Russian communistic experiment which will enable us, with intelligence and patience and thought, to modify our own industrial and economic processes in this country, and so take away from America the alternating periods of irrational and wasteful prosperity, and of depressing and almost degrading poverty which seem to be, at present at least, the characteristic and inescapable alternations of our own national life. I think of that utterly without bitterness. I realize that these alternations are due to great causes. One of them perhaps is the overrapid development of technological improvement among us. I realize that the mere fact that we are having this great depression at this time is going to summon the intelligence and the conscience of America until a remedy is found for it, so that I speak of the present depression merely as an occasion from which better things are to derive. I am looking at Russia to see whether she has in her vast experiment that which in any form, modified or otherwise, may be helpful in our own struggle upward. This is to me the most interesting phase of the Russian experiment. This experiment has been going on in Russia now for a number of years, more than ten, and it has not been sustained by the Lenins or the Trotskis or the Stalins who form less than a corporal's guard of professional communists. The full number of people who are members of the Communist Party in Russia, recognized members, is almost as small as the number that God spoke of to Elijah when he said he had yet seven thousand who had not bowed their knees to Baal. This great experiment seems to go on, sustained by the masses of Russia. If any of you have been at Moscow (I have not, but I have seen pictures and read of it) you would find in the public parks of that city little booths erected, and in those booths there are pamphlets and brochures, roughly printed, containing statements about the latest advance in chemical and physical science, describing technological processes in the United States—for we are their ideal in that regard. And when a factory whistle blows in Russia or a store closes for the noon hour, when the workers are released for lunch they go in droves, these young men from sixteen to twenty-five, into the booths for pamphlets and brochures about scientific subjects; they eat their lunch on the park benches with a sandwich in one hand and a scientific pamphlet in the other. The religion of the youth of Russia, at the moment, unsatisfying as you and I think it would be, the religion of the marching and militant youth of Russia at this minute is that Russia is going to be redeemed and saved

and made into a great and happy and prosperous people by science. Now whether that is a golden calf or whether it is not, the spirit is the spirit of worship, and if this may be true of Russia, it is evidence that its youth have begun to assume the task of saving their country.

Of course, I realize that education has satisfactions all its own, that the cultural opportunities, the cultural satisfactions are justification enough. But when we look past the individual and look to the state, we find that there is an overwhelming yearning for education. So to my first question, Why education? I now want to give an answer. For this reason: that democracy is the most difficult of all possible governments. That it is the best we all admit. That it is the best only because it has less faults than any other we also admit. But it is the most difficult because every forward step in the public policy of our democracy depends upon re-educating one hundred and twenty million people. Now when you have an autocracy, all you need to do to make a forward step is to re-educate the autocrat, one person. As soon as he makes up his mind, everybody's mind is made up. If Italy wants to take a step forward, the only person who need have a bright idea is Mussolini. But in a democracy of one hundred and twenty million people like ours, if there is to be an advance, then there must be a re-education of at least an effective majority of our entire body politic. There is a compensation, of course, in the fact that when this one hundred and twenty million people have been re-educated or advanced in their education to a forward step, it has an immense sustaining power. Those who want to undo it have to un-educate a hundred and twenty millions of people, so that when the point is gained it is not merely an occupation by long-range artillery, but the infantry are brought in to take possession of the conquered territory, and they dig themselves in. But now if that be true, if the process of governing a democracy lies in the continuous education and re-education of the great body of the electorate, then since everybody cannot have a complete education, the safety of the state is advanced just in proportion as the largest possible number are educated, so that when you begin the process of re-educating one hundred and twenty million people there will be, to start with, just as many men with education as possible. Those already educated will form hospitable centers for the receipt of the new ideas, nuclei around which educational conversation and discussion may gather, foci from which there may be disseminated all forms of these new ideas as rapidly as possible.

Now, however, if from the point of view of governing a democracy, education is to serve this purpose, then what kind of education must it be? And here I realize with great embarrassment that I

am on the kind of ground which wise men perhaps would seek to avoid, yet I plunge forward and lurch bravely on! I have some ideas on that subject. In the first place, as a layman, I venture to submit that we have probably begun the process of specialization rather early and perhaps have been overzealous about it. I am quite sure that a man who began to study physics when he was two years old and studied it almost to the exclusion of other things would probably be a better physicist by the time he got to be forty than if he did not begin to specialize in physics until he was twenty. I think that probably might be granted.

I recall a story, however, that has always fascinated my imagination. When Sir Robert Walpole was retiring from public life, after having been Prime Minister of Great Britain for a long and stormy career, one of the greatest episodes in the statesmanship of the British Empire, and a period during which that Empire spread her power over the face of the whole earth, he was making his last speech in the House of Commons. In the course of that speech in which he reviewed his own career with entirely excusable self-satisfaction, he quoted ten lines of Horace, which he thought rather aptly summed up his own career as a British statesman. About the middle of these lines there were two which he thought it wiser to omit, because, when translated, they read something like this: "I wrapt myself in the consciousness of my own sublime achievement." So he quoted to the British House of Commons four lines of Horace, skipped two, and quoted another four. The members of the House of Commons burst into unanimous applause at his cleverness and knowledge, both in being able to select so apt a quotation and in showing the consummate tact of omitting the lines which might have offended his hearers.

Now I do not want to speak of any personal experiences. I have sat in the gallery of the Congress of the United States a great deal. I have not heard much Latin quoted there, but I have not always been sure that such Latin as I did hear was understood. But I feel perfectly certain that there could be omitted from no ten lines of Latin you could find, including the first chapter of Caesar's *Gallic Wars*, a sentence, with recognition of that omission by unanimous consent of either House.

Now that story interests me, not because I think that Latin is especially important or has anything to do with the *Book of Common Prayer*, but it interests me from this point of view: It seems to me to indicate that there is a certain rather large minimum, as a body of common knowledge, which all educated Englishmen have in common. Their differentiation and their specialization begins at a higher

point than with us. There is, therefore, a greater community of intellectual companionship among British educated men when they meet than there would be if they began their specialization earlier.

I often meet men at the first sentence from whom I realize that they know more about medicine or physics or poetry or some other particular subject than I will ever know. And they doubtless, if they do me the compliment of having similar feelings, will perhaps agree that I know more about contract law than they will ever know. We pause, having respect for the undisclosed but conceded knowledge of each other. But the field of our common knowledge is too small for an instant basis of sympathy and understanding.

I have a deep conviction that if the intellect of America is ever to be effective as a governing force, it must be based upon a substantial body of common knowledge, so that men, when they meet on the intellectual plane, will start their differences at a higher level. I toss that in as a layman's contribution to a subject which is still, I think, a vexed one in the academic world.

Then I suspect that the kind of education I want for democracy is an education that has, perhaps, little at any rate to do with concrete knowledge. Perhaps what I am about to say is foolish, but it entertains me to say it. We inherit from our fathers, sometimes, their money, and sometimes their looks; rather more often, it seems to me, we inherit their religion and their politics. I am afraid that, even more often still, we inherit their least defensible prejudices. Now the reason for that is not hard to see. When our fathers talk to us about their religion and their politics, they discuss them, and we may disagree; but no man ever voluntarily discusses an indefensible prejudice, because he knows it will not stand such treatment. So the father merely inoculates his family; he creates an atmosphere which is favorable to the preservation of a prejudice which will not brook discussion. Now what I want education to do is to produce unprejudiced citizens.

I used to dine often at the house of Tom Johnson at Cleveland some years ago, and Mr. Bryan came there frequently as a guest. On such occasions Mr. Johnson used to invite a number of us to dine. Mr. Johnson was a teasing sort of person who liked to toss into a company the apple of discord of a new and hitherto unsuggested idea. At his dinner table he would say, for instance: "Well, what do you all think would happen, if, instantly, all laws for the collection of debts were abolished?" He would ask that kind of question; I have seen him do it over and over again. Every time he did it, Mr. Bryan would look thoughtful for a moment and then say: "Well, Tom, I feel"—and then he would tell us how he felt

about it. Then there was a very distinguished former college professor of economics, Mr. Bemis, a very gifted man who was then superintendent of one of the great public utilities in Cleveland, and after Mr. Bryan had finished telling us how he felt, Mr. Bemis would say: "Well, now, Mr. Johnson, I hold"; and then after Mr. Bemis had finished, Mr. Fred C. Howe, a very thoughtful and delightful person, would look meditative for a moment as though his mind were a subsoil plow, and say to Mr. Johnson: "Well, Tom, I think." So we had three approaches: Mr. Bryan *felt*, Mr. Bemis *held*, and Mr. Howe *thought*.

There is a story current at Princeton that on one occasion President Wilson, then a professor, addressed a member of his class: "Mr. Smith, what is your answer to this question?" The young man stood up to answer and started: "Professor Wilson, I *think*"— Whereat Mr. Wilson held up his hands and said: "Thank God!"

Now I think I have brought about an answer to my second question: What kind of education? the kind of education that will produce thoughtful and unprejudiced minds. The measure of an educated man is certainly what Mr. Wiggam says it is: "The measure of an educated man and the mark of an educated man is the extent to which he can keep his judgment in suspense until he knows all of the facts."

Now you are the educators of Ohio. I am a politician. I am profoundly impressed with the belief that the generation of boys and girls who are in your hands as educators now in Ohio are going to have to face and solve problems of the greatest possible moment, problems which my generation and yours has not had time to solve or has not known how to solve. In the domestic field the whole problem of the economic reorganization to which I referred at the outset of these remarks remains to be solved by those young people.

They are going to have to solve anxious and difficult, and perhaps unhappy, and sometimes very vexing interracial and interreligious problems. My generation was too near the Civil War to approach the interracial question intelligently. And more than that, they are going to have to solve the great question of international relations. I am persuaded that the peace of the world must be preserved if civilization is to be preserved. I shall not stop to tell you what the progress of the modern art of war is, but I have reached the settled conviction that we are at the place where we must choose whether we are going to permit great international wars and surrender civilization, or preserve civilization by composing our differences.

It does not seem to me that the United States can live in a world and not be of it. I think, for instance, that we cannot make economic

war on the rest of the world and expect them not to make military war on us. That does not mean that I think America's national policy has to be subordinated to the national or local policy of other people, but I think when the Congress of the United States passes a new tariff act and without a thought destroys the principal industry of a friendly state like Switzerland, for example, that that is a serious matter.

Switzerland lives on two things: tourists and watchmaking. Switzerland sold us about eleven million dollars' worth of watches a year and bought about forty-five million dollars' worth of products from us. Now, out of Congress I do not want to debate the tariff at all, but I am illustrating a point. Our Congress passed a law that destroyed the watch industry in Switzerland. If Switzerland were as large a country as we are, or were a member of a confederation of countries, each of which had a grievance like Switzerland, the ill will toward the United States would find some method of economic retaliation or other retaliation in the long run.

I shall not take your time to try to tell you what I think the answers are to these problems or to the kind of problems which the present generation of schoolboys, schoolgirls, college boys, and college girls are going to have to solve. They are going to face many such questions. I will go one step further to illustrate. Our generation undertook to solve one of those questions when we debated and discussed the question of the League of Nations in the United States. Now I do not care which is the wrong or right side of it. I have my belief on one side of it, and maybe you have your belief on the other, but I submit to you that no great and fundamental question affecting the policy of a great nation like the United States was ever decided with as complete an absence of argument and as complete a dominance of passionate prejudice as that question was decided, when we decided it. Maybe it was decided right, by coincidence, but if it was decided right, it was decided right in spite of the methods of decision.

What then is the answer to the question: Why educate? We have to give education because we have created an appetite for it. Our people will not do without it. They will not do without its cultural satisfactions. From the point of view of the state we must educate because the nature of democracy necessitates an educated electorate in order to provide for its own safety. What, then, is the answer to the question: What kind of education? The kind that is best is illustrated by a remark made to me by the greatest teacher I ever knew. She is still living, now retired from teaching. She was principal of the high school in the village in which I lived. Every

day of her life there has come to her in her retirement letters from China, India, Siberia, every place in the world, from former students who cannot permit themselves to be torn away from their allegiance to her, for she is the mother and mistress of their intellectual and spiritual beings. I told her one day that I thought she was the greatest teacher I ever knew. She said: "Ah! Yes, Newton, but unhappily I taught years before I learned the real secret of teaching, which is that the boy is more important than the book!"

Now it is for you educators to set boys above the books; educate so that you may turn citizens over to us politicians with differentiation at as high a level as possible, and a community of knowledge which will make a kind of "kinship or confraternity" among them over a wide area, give to the state citizens as thoughtful and as free from prejudice as is possible in this fitful and discordant world. Then if the politicians of the next generation, with such a product from you as that, leave as many vital questions unsolved as we politicians of this generation are doing, it will certainly be their fault and not yours.

The Press in Education

By CARLOS G. DAVILA[3]

Since I have accepted the invitation to address the Ohio State Educational Conference I have frequently asked myself with what authority I come to speak before a conference of educators when I am not an educator and scarcely can call myself a product of education: a lawyer by training, a journalist by profession, and a diplomat by accident. This thought recalls to me an observation which more than once came to my mind during my long labor as a newspaper man. Are the schools, the colleges, and the universities the only real vehicles of education? To what extent do they form the mentality of the students and, finally, that of a nation? Are not the writers, and especially the newspaper men, also essential factors in the education of a people?

In truth, the concept of education today departs more than ever from the exclusively pedagogical idea of a function of the school. It seems to me that, perhaps in greater proportion than the school itself, the theater, newspapers, magazines, books, the movies, museums, artistic production in general, the church, and the home are concurrent elements in education. And this concept, which evidently relieves the school and the university of a considerable part of its responsibility

[3] Ambassador of Chile to the United States.

for the mental development of a nation, puts into the hands of others, especially the journalist, a social function of deep significance. As a journalist I felt the responsibility of this function; for that reason I have ventured to come to you.

There is, however, a fundamental difference between the professor and the journalist. It occurs to me that the basic idea of pedagogy is, or should be, the Socratic principle: "I know nothing; let us think," which is the necessary stimulus to investigation and study. Well, then, the fundamental idea of our profession of journalism is the converse: We know everything and we are always right. But, as in all things of this world, there is in this arrogant idea of our profession a warrant of destiny. Without it there could be no journalists; it is this concept, true or false, of our importance which keeps us bound to the hard instruments of our labor and makes our work simple and even pleasant in the midst of the penury of a traditional poverty.

A newspaper man was once speaking to one of the outstanding personalities of France; he spoke to him of his political and social influence, of how the journalists make and break reputations and institutions at will, and of the deep track that they trace in the destinies of the world. "All that is true," replied the personality in the case, "but it is not less true that each time a newspaper man dies we have to take up a collection to have him buried."

To accentuate the irony of that situation there is frequently thrown in the face of the journalist what is actually the scantiest thing that he has—his salary. "Subsidized pen" is the first insult that comes to the mind of the partisan who falls into a polemic with a professional of the press. Such was the case in an incident which became proverbial in my country. A grand gentleman of politics and finance had exchanged with a journalist a series of articles and replies which were increasing in bitterness and violence until the great man, disturbed, wished to put an end to the controversy and wrote: "After all, it is not right that I should continue in this discussion; I write for honor while my contender writes for his pay." To which the journalist replied: "You are entirely right; I write for money and you for honor. Each one writes for what he lacks."

For many years, first as a journalist and later as a diplomat, I have been interested in the many things your country has had to offer mine. While an active journalist, it was my pleasure to bring to the people of Latin America a better conception of your country. I have endeavored to convey to my people the idea that North America not only has created methods of production, not only has brought into being characteristic systems of organization, not only produces and

sells but that it has done more, it has created a manner of living. And, side by side with its statistics of production, its manufactures, its banks, and its stock-exchange movement, it exhibits also the portentous figures which describe its cultural activity and reflect the idealistic inquietude of the American spirit. This last aspect is the one which especially must not be lost sight of in seeking to appreciate the general program of North American life, because both are inseparable, dependent, and complementary, the one to the other. Such fabulous figures as those of production would be impossible without those which sum up the cultural effort of the United States: one thousand universities with more than one million alumni; thirty-five thousand secondary and normal schools with eighteen million students; three hundred thousand primary schools with more than twenty-five million pupils; thousands of research laboratories and institutions of learning; hundreds of thousands of teachers and scholars with a devotion and a fondness for the profession which I do not think has been equaled by any country in the history of the world.

One of the most important factors in North American life has been the press. That is a truism and well accepted. The problems, the challenge given the press, however, is the same the world over. No doubt this assertion will give rise to such questions as these: "Has the press measured up to the stature of its mission? Do the newspapers and the journalists fulfill their educational function?" In a general way I believe that they do. Consciously or unconsciously, the press accomplishes an educational work of vast proportions. It is true that there is a bad press which diffuses error and evil, but we should not forget that there are also in all the world colleges and universities which give a false education. Abbé Dimnet made the best eulogy of the modern press, which we know so well and criticize so much, when he said in his great little book *The Art of Thinking* that the newspapers should be read with a red pencil and a pair of shears at hand. For Abbé Dimnet the newspaper is today perhaps the most copious fount of knowledge and education for him who knows how to read and to take appropriate advantage.

The real shortcoming that I see in the press is not that which is generally remarked of it: the publication of undesirable news and the exaggeration of the scandal note. In my judgment its limitations lie in the fact that it has not used its great educational power in sufficient measure to instruct the public in social behavior in order to develop citizens conscious of their social responsibility and of their collective duties. But, have the university and the school gone much further in this matter of the social ends of knowledge?

We are all culpable in that generations continue entering life

with a biological concept of the struggle for existence. And the principles of biology applied to humanity are in themselves the exact definition of the immoral. We have been educated with the idea that the survival of the fittest is the logical and legitimate result of life in society, and while we think thus there cannot be solidarity between men or between nations. The social function most necessary and important will continue to be, sad it is to say, that of the policeman.

It is far from my thought to substitute in education for the stimulus toward achievement which is the basis of production and progress a spirit of self-denial which might disintegrate the personality and translate itself into inertia. But I believe that it is time to think of blending the thought of success for the individual with the thought of success for the community in the educated generations. Thus competition will transform itself automatically into co-operation, and we will arrive at a point where we will desire for ourselves only what we would desire for others.

I seem to be discussing the social importance of education. Since Plato we have spoken of this and of the necessity that the educator should be the favorite son of the nation. Unfortunately, two thousand three hundred years have not been enough to carry conviction. But the philosopher of the Academy thought of education as a means of producing philosophers, thinkers—the select group which would reign over the destinies of the country. In our time of democracy it is not enough that education should accomplish this selection. We must mold the spirit and mind of the masses. Perhaps if the press had existed in his epoch, Plato would not have thought of democracy as a hopeless proposition.

There are not lacking today spirits equally skeptical. Karl Bickel said, a short time ago, that democracy is the Rolls-Royce of the nations; only the very rich countries can afford their Rolls-Royces. To Bernard Shaw democracy is a balloon put into the air for the people to look at while others pick their pockets. And I think it was a writer from this country who said that it is "government by the worst and surrender by the best." When I reflect on the power of education and the influence of the press, I believe that we have in our hands a formidable instrument to nourish our optimism. It is possible that if democracy is to survive, it will be through the press.

The press, whatever may be the exceptions, represents the perennial and violent cry against conformity, for that, however critical it may be, is always constructive, even though that affirmation may surprise the superficial observer to whom criticism is always negative. The press is the thorn in the cushion, that humanity may not go to

sleep. It keeps countries going ahead; and countries are like airplanes: they do not fall because they progress; they crash if they do not advance. However much the press may at a single moment seem to be pessimistic, it must in the long run be optimistic.

The pessimism of writers and of the press would be the tuberculosis which would undermine the life of our civilization. If we should venture to believe that we have arrived at the limit of human perfection, if we should accept that the present with all its depressions and injustices is the best to which the world may aspire, we would march to the black destiny of which spoke Arzibacheff, the Russian writer, who counseled the destruction in humanity of the instinct of preservation in order to obtain its gradual extinction.

The journalist cannot create a culture, but he is an essential factor in the dissemination of knowledge and erudition; he extends culture over the surface, but down deep it must be the work of the philosopher and thinker. In its treatment of international affairs the press, generally speaking, has not yet entirely fulfilled its grand mission. Sensational and dramatic phases of foreign life and affairs still tend to be emphasized. This particularly seems to be true in the attitude of North American editors toward the countries of Latin America. Revolt, political strife, or physical catastrophe stir the interest of readers for a few days, but with the normality of life and progress too many editors seem to be casual or indifferent. This fact does not necessarily imply a lack of good will; it means merely that editors, like dramatists, tend to appraise news values according to the conflict involved. With this policy of editors, I, a journalist, have no quarrel. But it seems to me that the occasional news should be counterbalanced by a more continuous report of normal life and development. Thus readers may see in fairer perspective the occasional abnormalities.

You have news, perhaps in excess, of the revolutions that occasionally occur in our countries. But you never hear the slightest echo of those other revolutions that occur, not in the streets nor on the battlefields, but in the minds and in the hearts. These are ours. And it is these revolutions of you educators and of us journalists that are of profound significance in the life of a nation. The change of a political system is ephemeral if it leaves no impression on the national mentality; a change in the mind and in the heart of a human mass is always transcendental even though it may not produce any immediate political effect.

In new countries like ours the moral and historical responsibility of the newspaper man is almost overwhelming. This was so years ago, and, although it may seem paradoxical, it is more so today.

Thirty years ago certain basic concepts were so entrenched in the scheme of Western civilization as to make all discussion seem unnecessary. Today the world shuns dogmatism; all is undergoing revision, and the leaders of human thought seem destined in this turbulent epoch of our existence to write anew on the slate that has recently been wiped clean. I feel always a little uneasy when speaking as a diplomat. The insinuation that diplomats are liars is almost commonplace. This insinuation could not be easily proved or disproved. Former Secretary of State Hughes once spoke of the tactics of some of the great masters of diplomacy. Talleyrand, he said, deceived continuously, and with success. His tactics became the method of the day. Metternich, who sometimes told the truth, and thereby confounded his contenders, scored equal triumphs. And when Bismarck ventured always to tell the truth, he caught his opponents off guard, and won.

If lies were the approved instrument of diplomacy today, we diplomats would find ourselves greatly embarrassed, for the searching eyes of the press are upon us always. Our thoughts, our actions, and our attitudes have become a matter of interest to vast reading publics, a part of the "stock in trade" for writers. Our only hope of salvation, therefore, is in truthfulness, and if there is distortion in the public record of events it may well be that the reporter and not the diplomat is really at fault. But I have to recognize that the public is generally inclined to blame the diplomat. We are not very much in public favor the world over.

A former minister from Canada, Mr. Vincent Massey, tells an interesting anecdote illustrating how diplomats are looked upon as a sort of international calamity to the extent that we are becoming afraid that some day or other the people will try to do away with us. His butler in Washington once brought him a visitor's card which bore in addition to the name the inscription: "Chief of the Department in charge of the destruction of foreign pests." He thought that his last hour had arrived until the visitor was introduced and happened to be a very nice, kind official of the Department of Agriculture who wanted to talk with him about the Mediterranean fly.

The many improvements in communications and multiplication of reportorial agencies have brought such changes in diplomacy that the diplomat at times finds himself bewildered and at a loss. Will Rogers once took me for a trip to a movie studio in Hollywood where he was working on the picture "They Had to See Paris!" He and Fifi D'Orsay were working alone in a scene in a small corner of the studio, and at various instruments grouped around them there were about a hundred people. The talkies were comparatively new and

the technique was not fully developed. I told Mr. Rogers that I expected him to explain to me what it was all about and what each person was doing. "I can't do that," he said. "This is just like diplomacy; nobody knows what it's all about."

Schopenhauer said:

The newspaper is the second-hand in the clock of history; and it is not only made of baser metal than those which point to the minute and the hour, but it seldom goes right. If it's wrong, the clock is wrong. Exaggeration of every kind is as essential to journalism as it is to the dramatic art, for the object of journalism is to make events go as far as possible. Thus it is that all journalists are, in the very nature of their calling, alarmists. Therefore, let us carefully regulate the attention to be paid to this trumpet of danger, so that it may not disturb our digestion. Let us recognize that a newspaper is at best but a magnifying glass, and very often merely a shadow on the wall.

Of course these, like all of Schopenhauer's remarks, are sour and bitter; but when we consider how strongly negative he was and how misanthropic, we may conclude that his estimate of journalism was an extremely benevolent one. Certainly he is right in his observation that journalism, to be effective, must be quick and must be strident; I agree with him when he suggests that if journalism is wrong it is because the world is wrong. And yet it is known that we all write more honestly than we act. Since Schopenhauer's digestion was disturbed, many other digestions have been disturbed and that to the great credit of the press. When he said that "journalism is but a magnifying glass" he practically defined the educational function of journalism, which is to bring into clearer relief what we are and what we should be, what we do, and what we ought to do. For the great mass facts appear not as they really are, but as they are written. That is why writing is certainly one of the greatest conquests of human kind in its groping toward perfection. It has permitted the continuity of civilization, which is progress. By its means have Greece and Rome not completely died for the human heritage? Their genius could thereby survive among millions of mediocrities.

Then, of all the forms of writing that the world has ever known, the newspaper is that of the greatest scope; it daily embraces all the fields of science, art, and knowledge; it has the greatest penetration in the masses. Somebody said that the trouble with dissemination of knowledge through writing is that those who know, do not know how to write, and those who know how to write, do not know. This emphasizes the magnitude of the problem that confronts the up-to-date journalist; he has to know, and to know how to write. But we have developed a new art, the art of questioning, which has made the knowledge of everybody we can reach the common property of the

journalist. And thus we have found that it is true, that to know how to ask for information is the half of every science.

What the book did for the vertical transmission of knowledge and culture through successive historical epochs, the newspaper and facilities of communication are doing now in the horizontal joining of civilizations and cultures of countries and continents of the same day. Thus it is no longer necessary that the centuries destroy our culture in order that it may become known, appreciated, and assimilated by the entire world. So great is the power of education that we are almost overwhelmed by the weight of the impending responsibility. As life is today, we educators and journalists have been given every chance. If our civilization fails there will be none more to be blamed than ourselves.

The Issues of American Statesmanship

By SIR WILLMOTT LEWIS[4]

My occupation in life is best described as that of a reporter, for I record for my paper events as they occur in the political life of the United States; the movements of social, economic, and political opinion in this country; and the implications and possible consequences of these events and this opinion. I desire only to do for the reader what I am charged to do for the *London Times* by cable and by letter.

For me, at least, all the issues of American statesmanship are contained within the bounds of one question: "What manner of relationship will this, the most powerful single nation on earth, be willing to set up and to maintain with the rest of the world?" There is no action of the American government in foreign affairs which does not bear upon that question today. And so interdependent is the world in which we now live that even in domestic matters there can be no major development whose results do not grow out from and affect for good or ill the fortunes of the foreigner beyond your gates. You are the masters of your own fate, but the iron and unmistakable law of great national power is that these bonds in the measure of their strength determine the fate of others. This is no longer the day of the stagecoach and the pony express, but the day of the automobile and the radiotelegraph; no longer the unorganized world into which this republic was born, but an international society of states bound each to the other and to all nations by a vast network of interdependent relationships—a world in which there is more

[4] Washington correspondent of the *London Times*.

intercourse between China and the United States than there was between North Carolina and South Carolina in Washington's time.

In this world so closely packed, so sensitive in each of its members to what is occurring in any other, the most important of all international problems is the devising of machinery of peace. Thirteen years have passed since the Great War ended, and that machinery has still to be devised. The story is too long for me to recount in detail. Its first chapter was a direct attack upon the question of disarmament which failed when it was made bitterly clear that, while the nations feared one another, they would all insist upon maintaining their relative strength. The only hope seems to lie in first giving to the people the sense of security so that they will feel that the waste of their resources upon armaments is no longer necessary. Mere existence of the League of Nations was not enough for the guaranty of security. Many of the members of the League felt it certainly would actually be forthcoming. No power would commit itself in advance to use its force, especially as this might involve it in a war with one of the great powers outside the League such as the United States.

It was necessary, therefore, to consider a means of creating the sense of security in peoples. I will not burden you now with a description of the ill-fated specie of "mutual guaranty," as it was called, or of the elaborate scheme of compulsory arbitration which was called the "protocol." It suffices to say that the first genuine advance, which might lead to the feeling of security, was made in 1925, and this for the protection of government. After long negotiations the Treaty of Locarno was concluded between Germany, on the one hand, and her western neighbors, France and Belgium, and her eastern neighbor, Poland, on the other. The powers concerned pledged themselves never to go to war over any question affecting their frontiers, but to submit all their differences to arbitration. So far as the western frontiers of France and Belgium were concerned, Great Britain and Italy guaranteed these treaties, pledging themselves to join forces against whichever power should break the treaty, the League of Nations being left to decide who was the guilty party. These treaties were excellent as far as they went, but they did nothing to advance the cause of disarmament, although France was presumably safe on the side on which she had most reason to fear, Germany. She did not think of reducing her forces to the level of those of Germany or of reducing them at all. It was hoped that the Locarno treaties might serve as models for others, but they have had no successors. Great Britain in particular made it clear that she would accept no further commitments, and it

is no secret, indeed, it can be openly stated that her uncertainty as to the course of the American policy was the deterrent.

The work, so to speak, had to be begun again with some slight advantage gained in the existence of these treaties. And the League appointed a Preparatory Disarmament Commission, which after years of labor has blocked out a model treaty of disarmament which is to be submitted to a World Conference in February, 1932. Mark the date, one of the most important dates in modern history. But while this work of the Preparatory Disarmament Commission was going on, two powers outside the League moved into the arena of discussion. Of Russia's sweeping proposal in 1928, that all armaments should be at once and completely abolished, I will say no more than that its sincerity was doubted, and that it had no response in any quarter. In the same year the United States proposed the adoption of a pact of peace, commonly known as the Kellogg Pact, by which every nation undertook never to use war as an instrument of policy, but to settle all differences by arbitration. All the nations signed this undertaking including America and Russia, and the oversanguine thought the problem was solved, the machinery of peace devised. But alas! it is still far from finished.

In the course of the discussion which preceded the signature of the Kellogg Pact it was made laboriously clear that defensive wars were not covered by it. But who is to decide what is or is not a defensive war? Such reading of history as I have been able to do has more or less conclusively shown me that the last maker of war who admitted that he was proceeding aggressively was Genghis Khan. It is certain that Austria would have described her invasion of Serbia in 1914 as defensive, and so did Germany consider her march into and occupation in Belgium. No such exception from the terms of the Pact can be made unless there be some impartial and recognized authority whose business it is to discover when war is defensive and when it is aggressive. In the case of members of the League such an authority already exists in the Council of the League, since in the eyes of the League any power is an aggressor which does not make use of the means of peaceful settlement which the government of the League provides. But what of the powers which are not members of the League, and are therefore left to decide the question for themselves? And what if one of them, let us say the United States, should make up her mind in a sense opposed to the decision of the League Council upon whether a war was defensive or aggressive and should demand the right to send her merchant ships convoyed by her men-of-war to the offender's port carrying her merchandise? Something obviously was lacking in the

general pact of renunciation of war. In 1928, Mr. Charles Evans Hughes, the present Chief Justice of the United States, made his suggestion of a consultative pact, which was to be, as it were, appended to the Kellogg Pact. It was to be in the form of an agreement among the signatories—the hope was that all the powers which had signed the Kellogg Pact would sign this consultative pact—that when an emergency arose carrying with it the threat of war, they would consult as to the best method of averting hostilities, fully understanding that this consultation neither implied that any power would use its armed force, nor did it engage any power to use its armed force. The proposal of Mr. Hughes is left today like Mahomet's coffin—suspended between heaven and earth—between the heaven, if I may be permitted to say so, of America's willingness to sign it and the insecure earth of her refusal. Why there should be this unwillingness to agree formally with other powers, to do no more than to consult together passes my understanding. Yet I know well that the unwillingness exists. It would also, it seems to me, be a modest contribution to the devising of this machinery of peace if the United States should formally undertake to consult with other great powers under the terms of the Kellogg treaty, and I deeply believe that the effect of such a contribution from the United States would be immediate and far-reaching. What is more, I do not believe that the forthcoming World Conference on Disarmament in February, 1932, can move very far toward this goal unless the United States is willing to make some such contribution.

If you will forgive an Englishman's pun, I would say that you cannot print a positive image of peace from an American negative. Will this country say, "no" if, at Geneva or wherever else it may be in 1932, a consultative pact or some modest equivalent is proposed? In my capacity as a faithful reporter of the present conditions of your country, I am bound to say, and I have already informed my readers that it probably will. I seem to discern in the developments of the past year or so a return in this country of the aloofness of other days—a right about face, which flings the United States away from co-operation and toward economic, and by extension, toward political isolation, or, as you may prefer to call it, self-sufficiency. The greatest creditor nation in the world is also the nation of the highest tariff wall, the nation whose legislators were talking not long since of embargoes to be heaped upon the coping of the wall, the nation which is now engaged in a vastly extensive attempt to reduce its own food supplies to the level of domestic need and thus to make its amplitudinous tariff wall more grimly exclusive than ever. "Twelve years after the war," as one English com-

mentator has rightly remarked, "the world presents in an economic sphere a strange phenomenon. There is a superabundance of all the foodstuffs and materials which are necessary for the production of wealth, but they lie stored and unsalable in the warehouses of the producing countries while their producers are impoverished." There is a superabundance of the machinery and equipment whereby these materials could be made available and of the skilled labor necessary to keep the machines at work. The chief cause of this strange state of things is that the nations pursuing the aim of self-sufficiency are placing all the obstacles they can in the way of the interchange of the means of wealth. They want to sell their own products, but refuse to take in the only possible payment, the goods of others. And all these nations with the exception of those who are being compulsorily disarmed are still resolute to make themselves safe against imagined perils by means of armament and are burdening their peoples with the colossal costs of maintenance. They know and frequently proclaim that they are in this way ruining themselves and that they cannot by these means attain security, after they know that economic self-sufficiency is unobtainable and that the attempt to secure it is ruined. If they cannot bring themselves to accept mutual interdependence and trust each other, they must still strive for self-sufficiency. And among these nations which is the nation that I have thus briefly, but I believe correctly, described as the greatest, the richest, the most powerful, and the most free from attack? There is not a man or woman but knows the answer—it is your country. The delegates of your country will go to the Disarmament Conference in 1932, which is in all human likelihood the most important international gathering which has been held since the treaties were made at Versailles following the war, and I give you my word, as an honest, friendly, and impartial reporter, that I do not believe they will carry to that Conference any constructive ideas.

I believe we have now reached, I am speaking with complete frankness and precisely as I would write to my own paper, the point at which, having secured an agreement which limits the fleets of the chief principal naval countries, your primary concern, that is to say, the primary concern of the United States with disarmament has been satisfied until 1936. With that satisfaction I have as yet no evidence which would make me believe that when the larger issue is faced at Geneva or elsewhere in 1932, this country will be willing to make even this modest contribution toward the sense of security for the peoples that I have mentioned.

I, as an Englishman, living in this country and loving this country, am deeply proud of the arrangement between your country

and mine in these things. I believe in, I have always believed in, and I am proud of the achievement of that arrangement between the United States and Great Britain which means our fleets are equal on the seas. It means a great deal more than people seem to think it means. My country fought for and won supremacy at sea over a long period of exhausting struggle. It is not a little to be able to say that because of our feeling of a larger need and a greater interest we negotiated that supremacy away in your favor. I am all for parity in these things between the United States and Great Britain, but I am still more for parity and responsibility for the peace of this world. And without parity and responsibility for the peace of the world between the two great branches of the English-speaking nations that peace will never be at all. Now the issue is chiefly in the hands of men and women, one hundred twenty millions of them, living in this country. I have no suggestion to make to you other than that you think as often and as deeply as you can upon this subject. I have no suggestion that you will take what I have said as necessarily a correct, a fair, and an impartial statement. But what I do want you to do, if you will, is to read and inquire for yourselves whether your country, the greatest single unit of power and influence on earth, will be able to advance to the cause of peace. Do not presume that this is a matter in the hands only of the statesmen and of the diplomats. I should like to quote something which Green, the historian of the English people, once said to my grandfather: "The wall of defense does not move by the giant pushes of its hero workers, but by the aggregate little tiny shoves of every one of the many of its workers like you and me." There is no propulsion so tiny, so apparently small as may not ultimately affect the issue. And the issue is one of peace. There are material interests at stake. Napoleon once described my country as a nation of shopkeepers. He was perfectly right. And if he were alive today he would describe the United States as a nation of shopkeepers, too. Again, he would be equally right. Our life is in trade, and without trade we cannot live, and without peace we cannot trade. Our material interest, no less than any form of altruism or idealism which you care to mention, our selfish material interest pushes us toward whatever contribution we can make in the devising of a machinery of peace which will give to the nations of the world a sense of security and permit them to live in trust with one another. It so happens that the balance of the world that we live in leaves the issues much in the hands of the American people. I am not suggesting any entangling alliances; I am not suggesting any more than a willingness to pull with other people. I desire to be understood

as being fully aware of the sinister reputation for propaganda which is enjoyed by men of my nation. I think that we are a little too flattered in the assumption that we can propagandize. There are too many varieties of this thing. There is "propaganda" which you all know; there is "propatuse" which perhaps you do not understand so well; there is "impropaganda" which of course I should never indulge in; and there is "malapropaganda" for those who remember dear old Mrs. Malaprop. I am not for the moment interested in propaganda. I am interested only in stating as honestly as I can my deeply rooted and almost passionate belief about a subject which is of as vital importance to every man and woman here as it is to any man or woman in your country. I am not suggesting, moreover, internationalism, which is a dreadful word. I wish that a new Whitefield might arise who could pronounce "internationalism" as Whitefield pronounced "Mesopotamia." You will remember that he could pronounce it with such flawless beauty of diction that old ladies would cry at the sound of the word. What I am suggesting is that we live in a world today in which we cannot live without co-operation. We live in a world today which makes the laws of our national and of international being interdependent. And we live in a world in which the contribution of the United States toward the devising of a machinery of peace may make for the difference between success and failure in the attempt of the Disarmament Conference to devise this machinery which is to prevail after next year.

SECTIONAL MEETINGS

The Parents' Rôle in Guidance of Children

By LOUISE STANLEY[1]

EDUCATION IS NO LONGER CONSIDERED to be a specialized job of a selected group for short periods of time. It is recognized to be as extensive as life itself, preparation for living through practical direction of living, and its processes are as much concerned with wise guidance in individual development as with the teaching of facts and skills. To see and understand the part of any group in this newer concept of education, the contributions of the various influences touching or impinging upon the child's life in any way must be analyzed. This was one of the valuable contributions of the White House Conference on Child Health and Protection.

In the research and deliberations of this conference, these two aspects of child development, health and protection, were not considered in the narrow sense of physical development. The various committees of the Education Section of the Conference studied the contributions which the home, pre-school groups, schools at different levels, vocational guidance, physical training, and activities of the child out of school make to the development of the whole child, physically, mentally, and emotionally. How could the activities of these various groups be directed so as to develop individuals, to quote from the Children's Charter, "prepared for a living which will yield a maximum of satisfaction"?

Education for individual development must meet a threefold obligation: first, it must help the child to adjust himself in his dependent state as a small child in the parental home; second, aid him in achieving during adolescence the necessary independence of that home; and, finally, assist him in maintaining the proper balance of interdependence involved in forming a new family of his own. In developing to full maturity, the child has to make three principal adjustments: first, to society; second, to the potential mate; and third, to the infinite. If any of these major adjustments is inhibited, or prevented by lack of stimulus or opportunity for development, his usefulness, his success, and his happiness in life will be greatly impaired. To insure these adjustments, the child needs the physical

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security which is ordinarily provided by the home and community environment; he needs the emotional security provided by satisfying family relationships; and he also needs that sense of security based upon a belief in himself which should be first achieved in the home.

Social statistics at the present time show that education has fallen down somewhere if its aim is not only vocational and intellectual efficiency but that emotional development which will insure adequate adjustments in all relationships, both material and personal, between the individual and his achievement. Impersonal social statistics on crime, insanity, marriage, divorce, size of families, unemployment, and other such indices of social stability show that a greater number of persons each year are finding it impossible to make satisfactory adjustments in a changing civilization.

The older social groupings, such as the family, the church, the school, the college, and the community are no longer playing their reciprocal parts in automatically insuring the orientation of the individual in adult life. Ours is a time of broad and diversified culture, widely spread, and lacking standards for the evaluation of creative work, thought, or personal conduct. Young people feel the need of guidance in the midst of this chaos. They feel that the home, the church, the school, and the college have let them down.

The apparent negligence of these groups is in reality a failure to realize and to adjust to the changing environment. These institutions, administered by persons of an older and infinitely more stable culture, have not appreciated the extent to which the vehicles for the transmission of cultural heritage and rules of conduct have failed. Each institution has thought that the others were carrying on in the old traditional manner: that the home was furnishing a foundation of ethics, manners, morals, and social practice and tradition; that the church was performing its ancient function of instruction in the tenets and practices of religious faith; and that the schools were strictly adhering to their own business of providing intellectual instruction. Among these various institutions there was a great deal of mutual recrimination because of the bad job each apparently was making of its part. The products being turned out by this system were not consistent in pattern. Something was wrong somewhere. Youth had no morals, ethics, principles, or tenacity of purpose. Some important process of production had failed.

There is little doubt that the home and the family have failed in the performance of their traditional functions. So many of the economic and social functions have been removed from the home through its adaptation to a mechanized urban industrial civilization, and so many outside influences have come into the home through

assimilation of the various commercial products of that civilization that the home seems to be little more than a meeting place for people of different ages and sexes and more or less congenial tastes.

One of the first tasks confronting the Committee on the Family and Parent Education was to determine what seemed to be the most fundamental human values in family life. It was the belief of the Committee that, if these fundamental values could be determined, they at least could be conserved and the environmental conditions adjusted to strengthen them, rather than that the family should continue at all costs to adjust itself to environmental changes.

It is impossible in our present state of knowledge definitely to say what these values are, but there are indications that the most fundamental values in family life are the product of the interaction of personalities within the family. While the physical environment, the cultural background, and the social status of the family undoubtedly aid or deter the development of the individuals in the family, the production of useful, successful, and fine individuals by homes which would be rated poor according to these criteria proves that there is something more important in the home than modern plumbing and period furniture. The important factor must be the interplay of personalities within the family group.

An attempt was made to develop a technique for the measurement of these intangible personality factors within the family which so greatly influence the development of the child. Through an interview study of 50 well-adjusted and 50 poorly adjusted children, a beginning has been made in devising a measure of the more intangible influences of family life. In another study of eight thousand American school children by means of a long and inclusive questionnaire, a relationship has been found between the degree in which children confide in their parents and such other factors of family life as group celebration of holidays, recreational activities in common, the type of control exercised by the parents over the children, the source of first information about sex, and the general personality adjustment of the child. There is at present no exact measure of personal relationships. Parents must depend for guidance upon the principles of human behavior as they have been interpreted in the fields of psychology, psychiatry, and mental hygiene.

According to these principles, the ideal family would provide for the child a friendly and hospitable environment for the development of his emotions and abilities, a secure relationship in a group of definite social status, wherein he was loved, protected, and encouraged. The child wants to belong to a family, to have his own name, his own parents, his own things. He wants his family to be as good as those

of his friends. He needs the affection, the security, and the encouragement of his family to fortify him for successful contacts in the outside world. If his parents are happy in their adjustment to each other, if they are working hopefully toward the fulfillment of an ideal of living, if they love their children with a sincere and unselfish love, in short, if they are well-balanced individuals gifted with a certain amount of insight, they are apt to provide the child with a wholesome emotional background which will contribute more to his development than would mere material advantages. Such an equipment for parents implies a shift of general ideals and practices throughout the educational system from exclusively informative and utilitarian instruction toward the development of an appreciation of values in human life. We have had in all education too much teaching of facts, too little development of individuals. It is impossible to separate the emotional satisfactions of family living from the more tangible functions that the family performs. These satisfactions permeate the whole texture of family living. Any analysis of family functions should be approached with this thought in mind.

The committee has suggested a classification of the functions of the family. The classification is not so important as is the picture presented of what the family does and a clue to the basic education needed. The importance of some of these functions is self-evident. They are necessary for survival. As for the others, there is at present no scientific proof of their relative importance. At least the performance of all these functions is desirable; and a slighting of one would require compensation in some other aspect of family life.

The family has in the past been the main channel for the transmission of culture and a major source of intellectual stimulus. Especially in the first of these functions is the family of today accused of failure. There is evidence that in the rural districts of this country, and in certain families of established income, the family still serves in the transmission of culture. This is desirable if variations in individual and group culture are to be maintained. In those families, however, which, through urbanization and migration, according to the present demands of industry, have lost contact with the larger family, and have made no permanent local ties, there is need for help in the performance of this task.

Although the child may no longer receive much actual instruction, or training in skills, in the home, the parental attitude toward learning can still afford intellectual stimulus. Eagerness to learn and hunger for truth on the part of the parents are a stimulus to the child no matter how poor the home nor how inadequate the

training of the parents. Willingness to answer questions, encouragement of constructive play, and the study of nature together are family practices stimulative to intellectual development. Sympathy with the child's intellectual interests encourages him to further efforts; and if parents are interested in the education of their children, their interest should extend to an understanding of the schools their children attend and a knowledge of modern educational trends.

The education of the child in the physical plant of the home can be furthered by providing him with the facilities for study, a place in which to study in uninterrupted privacy, materials for developmental activities, both intellectual and recreational, pets, materials and instruments necessary for practice in the arts, and books and periodicals. Besides furthering his education, a room of his own satisfies a need of the child for a place to keep his belongings where he will be undisputed master of his surroundings. It is important to teach the child to live in his own modern environment rather than artificially to re-create household activities of a previous age. Many educational values are to be attained through participation in household activities.

Aside from the purely intellectual stimulus, the basis of aesthetic taste and appreciation seems to be laid in early childhood. Although tastes can be altered in after life through education in aesthetic values, people seem naturally to prefer the types of things that were found in their early surroundings. If this fact were more widely recognized, people would be more careful of the type of literature read and discussed in the home, of the music selected over the radio or provided instrumentally, of the pictures in the home, of its furnishings and architecture. Except in cases of abject poverty and squalid surroundings, good taste can be displayed in the home through observance of the fundamental artistic principles. Clothing plays an important part in such artistic training. The aesthetic satisfaction from well-selected clothing and its psychological significance, particularly during adolescence, should be taken into consideration as well as economy and utility. The speech, vocabulary, and voice of the individual are largely a product of early associations. Bad habits of speech acquired in childhood may be lifelong handicaps. All of these factors help to determine the personality of the individual, or the individuality which he shows to the outside world; and they condition his enjoyment of life.

Even more fundamental to personality development are the ideas about sex, marriage, parenthood, and family life that a child absorbs from his family. Happy is the child who is born to well-adjusted parents who naturally inspire confidence and affection and provide

through the example of their living a serene and wholesome environment. Much literature is available on sex instruction for children and adolescents. It is generally advised that such information be given truthfully and frankly on the level of the child's intellectual development. The study of school children made by this committee would indicate that a parental source of first information about sex is tied up with personality adjustment and emotional stability. However, the important thing seems to be to give such information as one has frankly and without hesitation. Here again attitudes are significant. Emotional life is too complicated for any one individual to be comprehensively wise in his judgments and advice. The parent fulfills his part by generously and frankly sharing his experience, and by providing the example of adjustment in his own life as far as possible. The initial impetus toward adjustment or maladjustment will be provided in the home life of the child.

During the first few years of life the child learns to extend his interests and affections to include first the members of his family and then an ever enlarging circle of friends and acquaintances. The most intimate of these early relationships are those existing between the parents and the child. Through these relationships the child learns values of authority and personal liberty. If there are other children in the family, the child's social experience is broadened to include adjustment to the needs, interests, and desires of others near his own age. There is opportunity for both harm and good to result from these brother and sister relationships. It is thought that age-position in the family influences intellectual and emotional development. If the child comes through these adjustments with his self-esteem intact and a realization of the importance of give and take in human relationships, he has developed through experiences that are denied the only child.

Gradually through the outside associations of the family, the child learns, according to family attitudes and his own reactions, to adjust himself to unrelated persons. Friends of the parents and older children tend to exert an influence on the development of poise, culture, and social ease. From his own age-group he learns those social patterns which will help him to fit into the life of his contemporaries, to advance his emotional and intellectual satisfactions, and to attain a measure of success in his life work consistent with his abilities.

Through family attitudes, again, the child learns his philosophy of life, his concept of God, and his scheme of the universe. These are essential to continuing stability. At first the security of his home

and his confidence in his family satisfy his doubts and fears concerning the ultimate rightness of things. As he approaches adolescence he requires intellectual justification of his beliefs. As in the case of sex education, family attitudes are more important than actual instruction. High ethical and moral standards in the family, together with honesty in the expression of doubt and beliefs, form a wholesome background for the child's development. The family assists in the orientation of the child to life through helping him interpret experience and directing activities. Supervision of play and associations with other children, direction of work, and guidance of interests greatly influence the ultimate goals of his life.

As the child grows into adulthood he carries with him a strong coloration of his thinking on social and political questions gained from family attitudes. Those attitudes are closely associated with the early emotional satisfactions or disappointments of his life, and are difficult to change. A well-integrated family provides the best possible nursery for altruism, disinterestedness, ethics, and humanitarianism in social attitudes. Unless society can provide a satisfactory substitute for such an affectional hotbed, these qualities will with difficulty be widely implanted by any other agency than the family.

Within the family the child naturally finds intimacy and affection that provide a sense of security and emotional tone in his life. Family jokes, games, social customs, celebrations, and festivities shared in common strengthen the affectional bonds and contribute to the stability of the child. In such activities he experiences the enjoyment of seeing the members of his family as human beings, interesting, likable, amusing, companionable, and not merely as cooks, nursemaids, lawyers, artists, doctors, and school children bent on the accomplishment of their serious daily tasks. Recreation loosens tension and provides relief from restraint. Each member of the family finds in it an opportunity to be at ease in his enjoyment, free from the necessity of being anyone but himself. Aside from the opportunity for learning at first hand certain useful qualities like unselfishness, honesty, and good sportsmanship, family recreational activities are a regenerative influence in contacts with the outer, more impersonal world.

The enumeration of family functions just given makes little attempt to evaluate them according to their importance to the existence of the family or in the education of children. The evidence which the committee has been able to collect supports the opinion of mental hygienists that personality factors are the most important element in the effective functioning of family life. Whether these

personal relationships can continue to be effective in a different home environment than that provided by the family heretofore, and whether present cultural trends are actually threatening the essential nature of the family are important subjects for further research.

It is apparent that various types of outside agencies are assuming many of the former functions of the home. This is not dangerous in itself, but only in accordance with the disintegrative quality of the culture carried by these outside agencies, and the way in which the family controls, uses, and supplements these. We cannot expect much from the commercial agencies that provide services, furnishings, supplies, news, and entertainment for the modern family. In order that the best culture may be assured the family and, more particularly, the young people growing up in it, the older social institutions such as the church, the school, and the college will apparently have to assume more responsibility than in the past for the teaching of human values and the techniques of successful living. This, also, is the function of parental education. Parental education is a means by which all the problems facing family life are brought into conscious consideration, traditions are evaluated in the light of present-day living, and new techniques and methods of adjustment are evolved. Education for parenthood assumes that the problems of children have their origin as much in the personality difficulties of parents as in their lack of knowledge about the nature of the child. Therefore, parental education is as much concerned with the means of satisfactory emotional adjustment and the entire scheme of human values as it is concerned with the contributions of the arts and sciences to the rearing of a family.

During the early years of the movement, little was known in scientific circles about the needs of children, and even less was in a form which parents could use. With the beginning of the twentieth century the social and biological sciences began a period of rapid development which has had a profound effect upon the parent-education movement. Research in child development, in education, psychology, sociology; and the findings of psychiatry have led to a new understanding of children and of family life. Out of these have grown new techniques for the guidance of development and of human relationships.

While the pre-school laboratories, nursery schools, and clinics have been analyzing the problems of parents and the needs of children, various educational organizations and institutions have been active in developing facilities for making this information available to parents through the organization of parent study-groups, conferences of parents and parent educators, lectures, radio talks, and a

vast amount of popular literature. The content of parental education, in addition to principles and practices culled from tested experience, is derived from many fields of knowledge, most conspicuous of which are the general fields of sociology, psychology, psychiatry, and biology. Parent educators have been actively drawing upon these various sources for the information and techniques which are of value to parents in understanding the development of children and the intricate problems of family life.

Although outside agencies are assuming more responsibility than in the past for the teaching of human values and the techniques of successful living, the initial responsibility to provide an environment conducive to individual development still remains with the home. The most important influence for wholesome individual development of the child toward a balanced maturity is still the family. Parents cannot alone carry this responsibility, but theirs is the important part.

What the Community Expects of the Parent

By CHARLES SCOTT BERRY[2]

MANY FACTS SEEM TO INDICATE that the community expects less of the parent than ever before. The community, through the visiting nurse, clinics for children of pre-school age, medical inspection of school children, compulsory vaccination and required health education in the schools, free transportation to school, free lunches, free textbooks, vocational guidance and training, public playgrounds, athletic fields, tennis courts, and motion-picture theaters, is increasingly assuming responsibility for the health, recreation, support, and vocational education of the child. The rapid rise in the number of divorces, the ease with which a divorce can be secured, and that without loss of social prestige, are further evidence that the community is expecting less of the parent.

The many childless marriages and the decrease in the size of the family indicate that fewer parents are willing to make the sacrifices involved in rearing large families. The increasing number of homes from which both parents go out to work and the large number of parents who spend their evenings away from home are signs that the parents themselves are willing to have the community assume greater responsibility for the care and training of their children.

If this interpretation of what the community expects of the parent is once generally accepted, it probably means the disintegration of

[2] Ohio State University.

the home. The facts presented, however, are capable of a different interpretation. The improved facilities which the community has provided outside the home for the care, training, and instruction of the child are intended to supplement, not supplant, the home. That the community believes there is no adequate substitute for the home is indicated by the fact that the trend at the present time is in the direction of placing dependent, neglected, and delinquent children in foster homes, or supporting them in their own homes instead of committing them to county homes, institutions, or reform schools. The commitment of all feeble-minded children to state institutions was strongly urged a few years ago; today it is recommended only in the case of those children who are either a menace to others, or cannot properly be cared for in their own homes.

That the community permits the home to be broken up by divorce does not necessarily mean that it lightly regards the home. It means rather that the community considers it better for the child to live with only one parent than to live in an unhappy home. The smaller families of today may mean a more intelligent appreciation of the responsibilities of parenthood, an unwillingness on the part of parents to have more children than they can care for and educate.

Preparation for life in a rapidly changing social order means that blind imitation and respect for the parental *ipse dixit* must yield to the development of self-reliance, initiative, a sense of responsibility, and the ability to co-operate with others. The parent ceases to be a dictator and becomes a guide, counselor, and friend.

The fact that parents and children do not spend as much time together as formerly is not without its advantages. Undesirable family traits are greatly intensified through long-continued contact. Many personality difficulties can be traced to this one cause. Also, where parents and children are separated during working hours, the family life may be greatly enriched since each member has something different to contribute. Furthermore, it is desirable that the child should have a wider variety of contacts than those afforded by the home if he is readily to adjust himself to the great complexity of modern life. If the parent is to succeed in this new rôle of guide, counselor, and friend, education for him must be a continuous process.

The Motion Picture in Art Education

By ELIZABETH WARD PERKINS [1]

WE LIVE IN AN AGE OF MOTION and the motion picture. Children and artists have always lived in that age. They are intent on the living thing beneath static appearances, and in all they do declare that life and change are the most important facts we get from visible experience, and that whatever we see is a record of them. We are learning to go back to the children for experience free from conventions and inhibitions. Every child likes to draw, and does draw as a natural language, for free personal expression, until his elders laugh him out of it, or make him self-conscious by criticizing his crude but honest attempts. A boy came to his teacher during a poster competition for the athletic club. "How can I get the jump in Johnny?" he asked. The possibility of getting the quality that boy was after will insure interest and prevent the discouragement that made those who are his elders stop drawing because they felt a lack they could not express in words or line. When a child says, "I want to draw a horse, a man," he means a horse galloping, a man living, and his constant disappointment with his own drawings is because he has no clue as to how to make the creatures go. The motion picture was a success from the start for general recreation because it satisfied the natural desire of young and old for life and motion.

Educators saw the possibilities, and films were made to serve as a dramatic means for imparting information and insuring interest in connection with many subjects. For pedagogical purposes one thing was lacking: the students did not participate in the activity at the time, and the only way of recording the extent of the knowledge imparted was through oral and written tests. Even word-minded persons are forced to admit that words are symbols, and therefore subject to many interpretations and conventions. Drawing gives a more direct personal record which furnishes the subject-matter for a universal language, to be read from the standpoint of what each person has seen and thought about the visible world. The motion picture, when used for drawing, brings the contemporary scene into every classroom. It gives fresh material for expression and goes far

[1] Woodbury School of Applied Observation, Boston.

to furnish both the approach and the clue to ways of developing a continuous training in art from the kindergarten throughout life.

Confusion of mind betrays itself more readily through drawing than through words. If drawing is used as a language for the communication of thought and feeling, as direct a mental training can be given by the use of line as through a scientific or classical subject. The emphasis is placed on leading students to look and to question what they see. The mental and emotional powers are enlisted from the beginning. The doing is a result of what is thought and seen, rather than an end in itself. The final aim of such expression is that they should see and express the visible world without hampering convention.

If what we know as art is the concrete record of what exceptional people have thought and felt in all ages, it becomes clear that art and art appreciation cannot be imposed or taught for the sake of technique. The way of expressing is a result of a personal point of view and not an aim. If the personal equation is kept in mind, the importance of bringing a wealth of material into the classroom, from which personal deductions may be drawn and significant choices made, cannot be exaggerated.

Educators are ready to admit the value of art education today for cultural reasons and for the fruitful use of leisure time. But the old conventions still persist, and there is a long way to go before drawing is recognized in its everyday use as a great educational tool. Because of many factors, the teacher interested in the serious aims of art education and its co-operation with other subjects has all the difficulties and adventures of the pioneer. Superintendents of schools, parents, teachers of drawing themselves, all have to be converted to the fact that drawing need not be set apart under the mysterious name of art, with the generally accepted idea that it can be of use only to those of special talent. Drawing is a superior art, and as such does require all the special talent that can be brought to the effort, but it is also a common language at the disposal of anyone who is willing to use it for communication. Pictures speak louder and often more clearly than words; if we use them to prove what and why we see, that is, as a final proof of observation, we lay a definite foundation for clear and independent thinking, the greatest lack in American education today.

The use of the motion picture for drawing will help to break the art convention in a practical way. No one is afraid of the motion picture, and the public expects new and entertaining developments from it at any time. Therefore, at school and at home people of

all ages sit down together and play the great game of catching motion on paper. Self-consciousness about art vanishes, and the community spirit enters at this stage. Art has been a very personal and somewhat egotistic thing, but now, as in music, a group can share in the drawing competition, everyone out to do the impossible. When the drawings from a motion picture of Bobby Jones driving or Bill Tilden serving are shown, and the question is asked as to which has best caught the swing of the club or racket, everyone in the group can compare, and judge, and in the end gain in clearer thought and better observation.

There is an interesting parallel in the recent history of music, from which the art teacher can take courage. The situation in music twenty years ago was similar to that of drawing today. People said of themselves and their children, "I cannot turn a tune; I have no ear," as we still say of ourselves, "I have no talent for drawing; I cannot draw a straight line." It was found that through training the missing connection between the mind and the sequence of the scale could be re-established, leaving but few genuinely tone-deaf people. The approach was a mental one. Since that discovery, the whole nation has become awake to a musical inheritance, and no kindergarten is too poor to give an excellent training to potential musicians. The same principle can be universally applied to the arts. Through drawing as a language, all but a few individuals can be trained to question what they see, how they see, and whether they see at all. The mind behind the eyes can be developed; many will improve in observation and selection, each to his capacity, and a few will attain the equivalent in spacial relations to perfect pitch in music.

A tool must be proved of value before it can be generally used. Drawing must be freed from false ideas and standards before its place can be established in general education as a way of freeing the person of inhibitions and allowing full expression. William Blake said, "We see through, not with the eye." The facts that we see in nature are not valuable in themselves, but our estimate of the relations between the facts is of value. Notwithstanding the many efforts made at this time to demonstrate that imitation is not the standard by which we judge a drawing, that standard generally is held, not only by the public, but by many teachers of the arts. When the aim is to make a thing look "just like," the connection with general education and mind-training is severed. Drawings made from motion pictures should not be measured by the old idea of imitation. We expect fruitful drawings from the start because of the language spoken, the ideas and emotions they convey, not because an unselective, photographic image is retained and expressed. A drawing of a moving

animal may not look exactly like the beast, but it will act like it and carry the message of life and motion.

Drawing will remain a minor subject, and time will be given grudgingly for it until a general understanding prevails that it has a unique practical use in making the individual competent and clear-sighted. Time has always been one of the teacher's and supervisor's chief problems in a drawing class. A poor choice of method, arranged to bring a more rapid improvement in the short art period, often leads to superficial results. Ways of making things look right, because of some easy adaptation, are sometimes used, and the chief aim of drawing, the expression of what an individual thinks and feels about what he sees, is avoided altogether.

Nothing is fully seen, that is, nothing is clearly thought, until it can be expressed and judged objectively. When the motion picture is used for drawing, every moment of the lesson can be made to count for gain in memory and observation, motion and proportion. Full attention through interest is assured from the start, and the sketches obtained after sufficient drawing of this kind will be used as original material for composition, illustration, and design. The older training brought little into the classroom from which first-hand deductions could be made, and it was easier to imitate good examples of the classics than to attempt the longer way of personal experience. The study of the classics brought the knowledge, but not the personal experience, which was expected to be supplied by the teachers. Abundance of material for experience is now available, and the teachers will take a larger view of their subject when they become aware through their own drawing that only by improving the powers of the individual can better expression be forthcoming.

Drawing from motion pictures is profitable in the following ways:

1. *To focus attention.*—How directly can you turn all your powers toward what you are doing?
2. *To prove observation.*—How fully can you clear your thought in order to make a clear record of what you have seen?
3. *To make quick choice of essentials.*—Can you choose the larger things instinctively, and add detail in its relative order?
4. *To gain the power of feeling and expressing motion.*—Can you carry through your drawing, and keep the expression of life and action in moving forms?
5. *To prove and improve memory.*—What do you remember first? Can you express the essentials?
6. *To gain a standard in proportion.*—Is your figure or animal a unit? Could it move if made in that way? Where does your weakness in estimating proportion lie?

7. *To improve quality of line.*—Does your line flow and express your personal thought and feeling?
8. *To demonstrate lack of information.*—Have you seen clearly in your record where your attention, observation, and memory have failed?
9. *To remove the fear of drawing in beginners.*—Are you gradually overcoming your inhibitions through interest?
10. *To bring the world into the classroom.*—Enriching the curriculum.
11. *To advance the time when expression in line will be as common as in speech and writing.*—Acquiring a universal language.
12. *To force students to think for themselves.*—Through interest in making and interpreting records of personal experience through drawing.

To demonstrate three major advantages of drawing from motion pictures, a film of Bobby Jones is chosen. The drive, when first seen, seems too swift a co-ordination of motions to be grasped, but it repeats in slow motion which we can analyze before we see the quick drive again. As the fast and slow motions repeat ten times, the slowest observer may find material for drawing, while the more easily motivated student will make many sketches. After the third repetition, when the average mind has grasped the sequence, the original drive appears to have so much slower a tempo that the class finds it difficult to believe that they are watching the same film.

The three major points brought out by the teacher are selective observation, motion, and proportion. A single point only is emphasized at a time; no effort to get all three qualities should be attempted in a first lesson. In drawing from a moving object, the first choice is of the most significant or dramatic instant. The teacher might start with "Say, 'Now,' when your choice is reached on the screen." The "nows" will scatter according to the individuals' taste. Next will come the choice of essentials without which motion cannot be expressed, and a further opportunity for choice comes in the few lines selected to express the essential.

It is evident that a beginner would be completely at a loss if asked to draw a whole figure in motion, and that whatever contour he attempted would stop the motion. No imitation is possible with this approach to drawing, and the only reasonable way is to start with motion itself, expressed through a common symbol. The symbol may consist at the start of one line, like a flowing gesture, which might express the direction of the body or the club. This symbol would not necessarily be intelligible. The effort would be to elaborate this symbol while retaining the original quality of motion, and express in two, then three, and four lines or more, the instant of motion selected. Only then will the students attempt the fuller

symbol of the action or skeleton figure. Those with more experience could then select action lines from the clothes and contour which best expressed the swirl of that particular motion. In the criticism, which should be left to the students, only two points will be made: "Has a significant instant been chosen? Do the lines express essential motion?" If a student's line remains static, he should be urged to feel the swing in his own body.

For the third point, proportion, the material gathered may be used as soon as the symbol has acquired enough lines to express the elements of a human figure. It is well known that we learn most rapidly through personal interest. Many students will be interested in golf and Bobby Jones. When they are asked whether Jones would be able to move in that way if one leg was shorter than the other, each one's observation is rendered more acute, and the improvement in the proportions of the figures is immediate and permanent. We may well question whether the classic way of teaching drawing to beginners through many years of painful drill in proportion for its own sake was not the wrong approach, the more so when we remember the effort to inject life when proportion was at last achieved. With power to move as the first reason for proportion, the two chief qualities in a drawing, life and order, are gained at the same time.

To insure good results from motion-picture drawing, the film must be made with special reference to this use, and the teacher must know exactly what points to make from the material presented. Charles Woodbury, the painter, assisted by Elizabeth Ward Perkins, experimented with films for five years until the best practice was demonstrated. It was soon evident that the usual film had no value for drawing, and that even dramatic episodes from such films were of no use because the figures in motion were so seldom presented in profile, with simple backgrounds, free from confusion and detail. Films of animals and moving figures were made, in which a dramatic climax occurred, and which offered as many significant choices for drawing as there were students present. A number of experiments were required before it was found that if the episode was repeated ten times and in slow motion, so that the more rapid actions could be followed and analyzed, the students, freed from haste, could choose, compare, and draw to their greatest profit and satisfaction.

From what has already been said it is evident that drawing can also solve some of the more difficult problems in adult education. Not only in the cultural, but in the vocational and professional fields, drawing can be used as direct evidence of individual reactions. If the word "drawing" is substituted for "painting," Lewis Mumford's

definition gives us the clue: "Painting is the organization of human experience in terms of the image, as literature is in terms of the word. . . . its social justification lies in the fact that it is one of the chief means of enriching and sanctifying life."

To enlarge on the cultural side is unnecessary, as it is conceded that some degree of self-expression through the arts is needed for appreciation. The mind and emotions are but little involved in imitation of the work of others. Even a short experience of drawing from the wealth of original material furnished by the motion picture confirms the value of this exercise as the basis for an absorbing avocation or fuller realization of existing cultural material.

A course in the psychology of observation has been given to Freshmen and Seniors in teacher-training schools and art schools for several years. Drawing with and without the motion picture has been used. From the material obtained it has been possible for those in charge, as well as for the student himself, to measure and prove his abilities and weak places in a manner which admitted of little doubt as to the conclusions to be deduced from the work.

In professional fields, doctors, architects, teachers of literature, all have found that a fresh approach to and analysis of their own reactions to the visible world exerted great benefit on their professional life. Proof has been given that those who have been trained to clear, well-ordered thought will produce equally balanced records of observation, when fear of art is dispelled. In a busy professional life, time is again a major factor. While drawing from motion pictures does not furnish a receipt for quick accomplishment, it does give a combination of conditions which it would otherwise take much time to bring together.

Self-activity in the form obtained from drawing of this description has a final value for mental training at any age because it gives technique its due place and clarifies the meaning of the word. Technique as an aim for the sake of imitation is still firmly intrenched in many conservative minds, which inconsistently look for genius while crushing initiative. If the style is the man, there should be as many ways of expression as there are persons with something to say through any given medium. The apprentice in the wood-carver's studio, who complained: "You say, 'make initiative,' and when I do, you give me hell," expresses a general protest. Many a great career has been built on the expression of what the convention of the period would have called bad taste. If this type of bad taste and unconventional technique is honest enough, it is good soil for growth. Who can tell what manner of tree will grow from a seed that cannot be found in our catalogues and classifications? Lewis Mumford

again has formulated this idea in so admirable a way that the subject can be closed with his definition: "The meaning of art is not to be found in a grammatical analysis of its techniques but in the relevance and validity of a particular quality of mind in its expression of human experience."

NOTE.—Many requests for the loan and sale of the Woodbury films had to be refused. They were used in children's and adults' classes in the Woodbury Training School, Boston, and the Massachusetts Art School, Chicago Art Institute School, Dartmouth College, Children's Art Centre, and others. It was apparent that the practice could not be extended until sixteen millimeter films were made for the purpose and were available for sale. A year ago, the Eastman Teaching Films undertook to make motion pictures for drawing under the title "Models in Motion." Their library now contains films of animals and of people at work and play.

As with all visual aids, drawing from motion pictures is dependent for its full value on the teacher. A pamphlet with suggestions for the many ways the films can be used for teaching will be sent with each film and teaching directions for the films in question. The originators of the plan will be glad to answer any questions that arise in process of teaching and to hear of new adaptations of the idea. Communications should be sent care of Eastman Teaching Films, Rochester, New York.

The Standards for Attendance Officers

By BLANCHE MERRY[1]

That the United States is committed to a democratic form of government is a safe assumption. No further proof is needed than the first three words of our Constitution, "We, the people," and the widely known words of Lincoln, "a government of the people, by the people, and for the people." The public school is the one institution wholly American. It is here that all the children of all the people may meet on common ground and receive training in the democratic principles of government. It becomes, therefore, the strongest ally of our nation to effect democracy.

Your state and mine, Ohio and Indiana, with three others were formed from the Northwest Territory. The Ordinance of 1787 governing this territory carried with it the principle of educational opportunity for all children at public expense. Our state constitutions in accordance with this Ordinance provided for the state to organize a system of public schools for

> knowledge and learning generally diffused throughout the community is essential to the preservation of a free government; it shall be the duty of the general assembly to encourage by all suitable means moral, intellectual, scientific and agricultural improvement; and to provide by law for a general and uniform system of common schools, wherein tuition shall be without charge and equally open to all.[2]

"We, the people" have every reason to expect this ally of our government, the public school, to do some definite things for the state: we expect that a public-school building be available to all the children; we expect the training set up in the school to be such that every child may be benefited, the lower 15 per cent as well as the upper 15 per cent; we expect the school to assume the responsibility for moral training as well as academic training, that formation of character be on a par with factual information; we expect that the type of training be adapted to the individual child; and we expect that the school and the local community be united in a common understanding. Perhaps these represent ideal functions, but in so far

[1] Indiana State Department of Education.

[2] *Constitution of Indiana*, Art. 8, Sec. 1.

as the school intelligently assumes its responsibility for habit formation as well as intellectual training, then our expectations are realized.

On the other hand, we are confronted with too many proofs of the failure of the school to train the youth in proper social adjustments. In the year 1930, there were 48,644 commitments to county and state penal institutions in Indiana. Of course, we cannot lay the entire blame on the school alone; the home with other institutions must carry a share. Yet we cannot overlook the fact that all these individuals had passed through the schools of our state, or some other state. Likewise, on September 30, 1930, there were 9,548 mental defectives in our institutions. It is recognized by medical specialists that many of these cases could have been prevented if the school officials had detected the symptoms in the lower grades. In 1903, out of 761 commitments to Indiana state prison, 66 had had no schooling. Out of 916 commitments to the women's prison for 1929, 7 had had no schooling, and 170 had been irregular in their school attendance. In the test given by the prison, 26 could neither read nor write, and 41 were unable to add in arithmetic. The federal census of 1920 revealed three million illiterates in our nation. Indiana was charged with 52,034 persons who could neither read nor write. If all could read or write, that would not be sufficient.

President Hoover, in addressing a boy scouts' meeting said, "The American boy—with his sister—is the most precious possession of the American home." He counseled that the youth's leisure time be employed to direct his interests to constructive joy instead of destructive glee. "We assure ourselves," continued President Hoover, "that the cure of illiteracy and the fundamentals of education are the three R's, but to these must be added another R—responsibility, responsibility to the community if we are not to have illiteracy in government. The conviction that every person in the republic owes a service to the republic; that the republic rests solely upon the willingness of everyone born in it to bear his part of the duties and obligations of citizenship: this is as important as the ability to read and write—that is the only patriotism of peace."[3]

In order to insure educational opportunities for all children, each of the forty-eight states has placed some sort of compulsory-attendance law on its statute book. Compulsory education is not a new idea. It was propounded by Martin Luther in a sermon four hundred years ago. He said,

> The civil authorities are under obligation to compel the people to send their children to school. . . . If the government can compel such citizens as are fit for military service to bear spear and rifle, to mount

[3] *Indianapolis News*, March 11, 1930.

ramparts, and perform other martial duties in time of war; how much more has it a right to compel the people to send their children to school![4]

The matter of compelling parents to keep their children in school is quite a different matter, even though the state is committed to universal education and its constitution asserts its right for preservation by establishing schools for the educating of the youth. We know from experience that parents are often the block to their children's school attendance. Especially is this so when their children have arrived at that age that they may be of service at home or be profitably employed by others. And again, we know that schools do not always see in every child an opportunity to help, but fail to train them to make adequate social adjustments, with the result of unhappiness, truancy, and it may be, delinquency.

It was 1897 before Indiana enacted a compulsory school-attendance law. At that time, two qualifications were set for the person who should be appointed to preserve the state from future illiteracy, that he "be a man" and that he "look after truants." In 1901 a county board of truancy was created. This board was partly responsible for the enforcement of the law. By 1913 we had advanced to a state truancy board, the personnel of which was composed of the state superintendent of public instruction, the secretary of the state board of charities, and an appointed county superintendent of schools. This board was charged with the duty of setting standards for attendance officers. The statute specified eighth-grade graduation. The statutory standards were largely paper steps in the progress of universal education in Indiana.

It was 1921 before a new law was enacted which created a state board of attendance with an executive officer responsible for the enforcement of the attendance law. The board's personnel was the same as that of the state board of education. Although the statute fixed the minimum educational standard of an attendance officer, the board was empowered to make higher standards, to remove attendance officers for incompetency and neglect of duty, and to design and require the use of a uniform system of records and forms for attendance reports. The statute further provided for the appointment of attendance officers in every county and in each city with a school enumeration of two thousand. The duties of attendance officers were definitely set out, two of which are that the officers shall keep such records and make such reports as are required by the state board of attendance and the superintendent of schools, and that they shall visit the homes of children who are absent from school, or who are reported in need of books, clothing, or parental care.

[4] Graves, F. P. *A History of Education during the Middle Ages*, p. 185.

I have tried to place before you the evidence that our country is committed to universal education, that the school is an institution that has been developed to train its citizens. In order that the citizens might be trained, all the states have placed on their statute books compulsory school-attendance laws. But a law on the statute books is not enough. There must be persons responsible for the administration of the law.

It is not difficult to sit at a desk and improvise standards for others, but making standards that will develop those working under them is quite a different matter. The latter plan calls for insight into needs and judgment of how to proceed in order to have fulfillment. Thus the standards presented here are largely the result of experience rather than ideals, although I do not wish to imply that ideals were lacking in building the experimental steps.

The attendance officer, to be successful, should have an understanding of the community in which he is to serve. He should know fairly well the normal interests of the community, the dominant nationality, the educational background, the industries, the schools and school officials. All of these factors have a direct bearing on the kind of work which that person may accomplish for the children of that school area. For this reason, the local officer should be selected by the local school officials, and from the local community, provided one may be found who can meet the standards set by the state. The local nominating official and the state official should co-operate in order that undesirables may be eliminated from applying. It is my experience that the type of attendance officer selected reflects the educational and social outlook of the school officials.

The old standard for attendance officers in 1897 prevailed in the minds of some school officials as late as 1921. One of the first letters which I received after my appointment as state officer was from a county school superintendent, who made it very clear that, in his opinion, the attendance officer needed little or no education. You can understand how difficult was the problem in that area of securing a person who was educationally and socially equipped to make adjustments for the children to attend school.

If the law makes graduation from an elementary school as the minimum standard of education for attendance officers, then it is not a bad thing to require such applicants to pass successfully an examination on the law and the kind of work which such person is expected to do. Persons of high-school graduation and those having further training may be eligible without examination. By this exemption, better trained persons are encouraged to enter the work.

Every attendance officer should be licensed. Attendance work is a special kind of social service and requires specific training. The person who can explain successfully the school program to the parents of the school district must understand and appreciate the school. The problems presented in the homes demand intelligent sympathy and firm belief in children's rights. The other side of this triangular training is that of knowing other agencies to which an appeal may be made in case the school officials are unable to cope with the problem in any particular home. Another reason for the license standard is that it makes the attendance officer a school official, ranking with teachers in training for work to be done. It gives the officer a school status. It adds dignity to the service. This is not to be counted unimportant, especially when the background of attendance service is of the "truant officer" kind. Perhaps the picture of the old truant officer who looked after truants is the greatest hindrance to the understanding of our present attendance service. The old picture blurs the new one.

Licenses for attendance officers should be of several different grades, as one-year, two-year, and five-year. The one-year license should be the minimum, and the five-year the maximum. The renewals should have very definite requirements, as also should the conversion of one form of license to that of a higher form. For example, the holder of a one-year license should present evidences of at least high-school graduation and a definite number of term-hours or semester hours of training in attendance courses. In order to convert the one-year to a higher form, there should be added training, a longer period of service with an increased success rating. The conversion of a two-year license into a five-year license should be made only on college or university graduation with a special minimum length of service and a rather high success rate. Through this process of rewarding training, experience, and success, the officer in service is encouraged to seek advancement in his work.

The remuneration for service should be made on a basis of training and kind of service. This would mean that the kind of license would determine the salary. Here is a field for education of the public as well as the school officials. When attendance officers are truly classified as school officials, with proper recognition for school social service, then there is hope for remuneration commensurate with the service rendered.

For more than eight years, I have watched carefully the success-rating plan of improving the work of attendance officers. It has some weaknesses, but it has many virtues. In 1922 the state board

of attendance accepted certain definite items which were to be the basis for rating the officers of Indiana. Any officer who failed to rate 85 per cent or more on the total list was not eligible for reappointment, and under the licensing plan could not have his license renewed. The items are as follows:

I. Co-operation with ..... 30 per cent
   1. State Board of Attendance:
      1) Reports
      2) General suggestions
   2. Superintendent of the local attendance district
   3. Other attendance officers reporting the removal of children to the other districts or out of state
   4. Principals and teachers
   5. Parent-teacher clubs
   6. Child-welfare organizations
   7. Community work in general

II. Field work ..... 50 per cent
   1. Accurate accounting of all the children of the district:
      1) Five to six years old, inclusive, in public, parochial, and private institutions
      2) Seven to thirteen years old, inclusive, in public, parochial, and private schools
      3) Fourteen to fifteen years old, inclusive, in public, parochial, and private schools
      4) Working certificates to children under sixteen years
   2. Personal Work:
      1) Number of visits to homes
      2) Number of visits to schools
      3) Relief
      4) Personal case study

III. Office work ..... 20 per cent
   1. Filing system—name of every child in the district with certain data thereon
   2. Record of special cases—history, method, and results
   3. Record of children received from outside the district
   4. Record of children leaving the district

This plan, if used to develop a finer group of attendance workers, may be wholesome and good. It must not be used to set up an element of fear or worry in a worker's mind. The attendance work is of such a nature that the officer, if he gives good service to the children, must have a feeling of freedom. He must believe in himself and be confident that the local superintendent and the state officer are supporting him. There must be no doubt of loyalty. Because of the vital importance of the work of the attendance worker in this respect, it is necessary that the state officer and the local officer work

in a most co-operative manner. Grading out is right when the party will not approach homes in the right spirit, or when an accounting for children's attendance is carelessly done. The success rating also helps the state board to determine who are competent and dependable.

Group meetings of attendance workers develop efficiency in attendance service. The group is composed of those in areas which have like interests. The problems are common in nature. The ways of securing reports from teachers are exchanged. The handling of hard cases is talked over. Sometimes a program is carried out on which local superintendents, judges, principals from the school, and other interested persons are the speakers. This gives the attendance work a better status in the community. The school and parents understand it more clearly, and the officers themselves have greater respect for the work and for each other. It is one of the most vital ways of developing a high standard for attendance service. Another form of the conference is an organization of the attendance officers of the state with leaders and committees of their own. Affiliating this organization with the teachers' association gives strength and appreciation and understanding to the members of each organization.

I have said nothing of character, loyalty, initiative, and tact as fundamental factors in the personality of the attendance officer. It is hoped that the local superintendent will be interested to such a degree that he will consider these traits in making his selection. Often he does not or cannot because of circumstances. It then becomes the duty of the state officers to try to develop such native qualities as the selected co-worker possesses. If this is unsuccessful, then the burden falls upon the state director to apply the success-rating in the interest of the schools and children.

All parents are not sufficiently trained to seek the best for their children. The schools, too often, are assuming responsibility only for academic training of the so-called "normal child," and are making little or no provision for training in social adjustments, particularly for the problem children. The work of the attendance officer is to introduce to the school the individual needs of the child, and to the homes the opportunities afforded by the school.

Hence, the person who is charged with this important service to the children of a state must be equipped educationally. The field is one of social adjustments. The home must be educated to see that it must adjust itself to the school. The school must realize that character is the most important asset in a child's success in life. It is the socially minded, trained attendance officer who can, and who must, bring the home and the school into close relationship.

Contributions of the Visiting Teacher

By ORVILLE G. BRIM[5]

THE SERVICE OF THE VISITING TEACHER from the very first has been a boon to the classroom teacher. As our conceptions of the nature and function of education and of the service rendered by the visiting teacher have changed, the latter has grown in fundamental significance until such service as the organization renders has become an absolute necessity for effective classroom teaching. Such service had its origin in the period when educators were becoming sensitive to the maladjusted children—children who were having difficulty with school work because of language handicaps, lack of mental ability, indifference, or physical defects; who were tardy or irregular in attendance, or dropped out too early; who were behavior problems either in or out of school or both. These children became the subject of attention and study by the visiting teacher.

The first stage was remedial work, but, in keeping with its growing purpose, the visiting-teacher movement has become extremely concerned in preventive work. This demands that the visiting teacher must enter far more intimately into the classroom situation and, in co-operation with the teacher, detect cases of incipient maladjustment, study and deal with them. All this service was possible to the classroom teacher in the conventional school, for even in this conventional school, concerned mainly in having the child acquire certain formal skills and master certain predetermined subject-matter, the child had to be in school, he had to be obedient, if not very willing, and his physical and mental condition had to make learning possible. To appreciate fully the contribution the visiting teacher can make to the classroom teacher, however, one must understand the purpose and nature of modern education. Responsibility is assumed for actually improving the character of the child, for making his daily life right now happier, richer, more individual, more social, and more efficient. In every way the classroom teacher's dependence upon the visiting teacher has been multiplied many fold.

In such an educational program one finds almost unlimited service which the visiting teacher may render to the classroom teacher. The in-school learning is conditioned by the child's previous out-of-school experiences. The effectiveness or permanency of any valuable change in the child's point of view, interest, or standard is conditioned by the life to which he returns. The teacher, then, must know the whole child, the full range of his experiences, the world in which he

[5] Ohio State University.

lives, and modify and direct all these forces to coeducative ends. This she cannot do alone if she would.

Specifically, then, where and how does the visiting teacher render service to the modern classroom teacher? The curriculum of the modern school should utilize the experiences of the group and be related to both interests and needs. Some of this data the teacher can gather. Much of it lies further afield, requires more intensive and extensive study, and, in many stubborn instances, can be secured by a trained person through intimate personal interviews.

The ends of modern education are dependent upon the emotional aspect of life. Prejudices, fears, lack of self-confidence, feelings of inferiority, social maladjustments that are endless in type are basic determiners in the child's educational income. This field, even more than the child's experiences, interests, and needs, is difficult to explore. Here the classroom teacher is largely dependent upon the visiting teacher. The teacher must know the level of culture of the environment to which the child returns and in which he must live out his new vision. For anything more than superficial knowledge here the teacher awaits the visiting teacher's diagnosis.

Since the child's life is a unit, many of the causes for school problems in either the learning or conduct lie beyond the school. Indifference, rebelliousness, dullness, inability to learn arithmetic, quarrelsomeness, lack of responsibility can be solved almost invariably only by discovering and modifying forces outside school life. When it comes to the realization of an out-of-school condition that encourages or permits the child to live out his new vision, the teacher is almost helpless. She may teach ever so wisely, but both she and the child will be doomed to failure, disappointment, and despair unless the visiting teacher with her larger contacts and special training makes this new level of living possible for the child.

Solving the Problem of the Whole Child

By M. R. TRABUE[6]

ONE OF MY CHIEF REASONS for accepting the invitation to appear on this program was the unusual wording of the topic assigned to me: "Solving the Problem of the Whole Child." How different that is from the usual topic of discussion in meetings of teachers. Something important has happened to our educational philosophy when we find ourselves undertaking the discussion of "solving a

[6] University of North Carolina.

problem" rather than of "teaching." How does it occur that we are approaching the educational task with a frank admission that we do not know exactly what to do?

Another distinguishing feature of this topic is the phrase "whole child." What is the significance of that word "whole"? Does it really signify that the problem to be solved is something more comprehensive than the task which teachers have always had in mind? Is the whole child something more than the sum total of the child's spirit, mind, and body? How does it come about that instead of being asked to talk on "How to Teach Spelling," or "How to Make the Child Come to School," I was asked to talk on "Solving the Problem of the Whole Child"?

The wording of my topic is probably no accident. Whoever phrased it must have had in mind a broad view of modern life and a long period of educational history. The first teachers gave instruction in what would seem to us now a remarkably narrow field of subject-matter. In the real business of everyday living there was no need for teachers, but in a few special things in which the tribe engaged only rarely and upon formal occasions, there was need of a teacher. The things to be done on these occasions were always the same and were always to be done in the same way. A standard situation was to be met in a standard manner which had been adopted arbitrarily, and which was probably no more logical or effective than any other manner that might have been adopted. Passing on this standardized tribal custom or ritual from the older to the younger generation was the task of the primitive teacher.

How different that early conception is from the one suggested by my topic! "Problem solving" certainly does not indicate a uniform situation or a uniform reaction. It points rather to the fact that under present circumstances we do not know what problems our children will be facing when they reach adult life. The political, economic, and social problems of 1951 are certainly going to be very different in many respects from those of 1931. We can no longer teach standard solutions to standard problems and feel any confidence that those whom we have taught will be able to meet successfully the demands of the complex civilization in which their lives must be lived. We face the necessity of preparing our pupils for efficient living in a changing world whose very standards are not yet known. Is this task impossible? I admit that I do not know.

There is one standard, however, which offers some hope of becoming permanent and universal. Those solutions will doubtless be wise which contribute most to the permanent satisfactions of human beings, and those will be unwise which tend to destroy the

permanent values of individual and community life. We are coming more and more to understand that not only the Sabbath, but all other institutions as well were made for man. Those solutions of life's problems which make the most permanent contributions to the individual happiness of human beings will probably be recognized as best, and be adopted for such a period of time as they continue to meet these requirements.

The phrase "whole child" points backward, likewise, to the extremely narrow field of the traditional school. In primitive and pioneer life the child was in constant daily contact with all the activities and institutions of practical adult life. He learned his social, economic, civic, religious, and vocational duties by actual participation in these activities. He came in contact with the whole of each of these phases of living. Each was completely open to him, easily observed and understood, and in its normal active relation to every other phase of life. The school held only a minor place in this vital scheme of things, contributing chiefly to certain mental accomplishments which could be entirely omitted without serious loss to one's success in practical life.

Observe the changes that have taken place. Pioneer life was relatively simple, comprehensible, and thoroughly integrated. The child understood and participated in all the life about him. He was a real personality, with a small but definite part to play in food-getting, social life, government, and all the other phases of community life. Today the child finds himself so far from the actual conduct of these functions and with so little possibility of seeing more than a small fraction of the operation of any one of them that it is almost impossible for him to develop any accurate picture of their mutual relations or any helpful ideas of how each is conducted. The modern child comes in partial contact with only a few phases of a complex industrial civilization in which he himself takes little if any part. His view of life is incomplete, disjointed, and almost unintelligible.

Success in pioneer life depended upon versatility and a broad comprehension of all phases of man's activities. The man who could build his own house, kill his own meat, raise his own grain, make his own clothing, and adjust his own disputes was almost sure to be a success. Today there is little place for such a Jack-of-all-trades. The modern world rewards richly the man who can do some one thing exceptionally well. The man who would probably have been a great success in pioneer life is now acting as a guide for hunters, or perhaps as a tenant farmer in the South.

The school has from the beginning given instruction in those matters which could not be learned more readily from actual participation in life itself. In pioneer days the task of the school was relatively simple, but as life has become more and more complex the phases of life for which the activity itself could not supply adequate training have increased in number by leaps and bounds. The growing demand for efficiency has made active participation by children almost impossible. The school as the residuary legatee for all the varied institutions of the community has been forced to assume the responsibility of training children for a larger and larger number of special tasks and responsibilities. The modern school is the state's chief agency for enriching its life and for improving the quality of its citizenship, and if the school fails in this task the social results will be serious and far-reaching.

What is the problem of the whole child? Is there any such problem? Are there not rather just as many such problems as there are children? Each modern child constitutes a problem requiring a personal solution which is unique in certain important aspects. In spite of the individual character of each problem, perhaps it will be helpful to point out some of the factors which help to complicate the problem for each modern child and school. A problem is usually produced by a conflict between what is and what is desired, between personal desires and social demands, or between other forces that must be harmonized in order to obtain a solution. What are some of the obvious conflicts that must be adjusted in solving the problem?

The first group of conflicts to which I would invite your attention is the series of conflicts between the relatively simple nature of the child and the sophisticated nature of the school in which he finds himself. First of all, the organization and machinery of the traditional school was set up to produce uniform behavior of a definite pattern in all those who passed through it. The organization is essentially military, with a centralized head who issues orders to his immediate subordinates, who in turn pass the directions down to the teachers, who transmit them to the pupils. Through tests, examinations, quizzes, homogeneous grouping, and other devices the school seeks to turn out a product which is as nearly uniform as possible. Biological nature and environment, on the other hand, create children who differ widely in interests, in attitudes, in capacities, and in achievements. Modern civilization and the child's own nature demand specialization and individualization of treatment, while the schools themselves offer uniformity and regimentation. This conflict creates many of the problems in which the whole child is concerned.

The school organization puts a strong emphasis on subordination to authority and to the established social order. The personal interests of the pupil are in most schools rigorously subordinated to traditional ideas of what would be best for the school organization as a whole. The individual pupil naturally desires to see the justification of his efforts and of his social alliances in personal benefits to himself and in the attainment of desired personal objectives. This conflict between the pupil's natural desire for individual benefits and the school's organization for the easy administration of mass activities is a constant source of difficult problems.

Because of its past history the school has looked upon a selected list of subjects as educative and has had little confidence in the value of other subjects and activities. There has also been a tendency to consider a fairly large percentage of the general population unfit for education. This group, which in past generations did not attempt to stay in school, is now remaining in school and finding itself faced by these traditions. Neither pupil nor teacher sees any great value to the pupil in his study of the traditional materials, but the individual pupil has no other place to go for instruction, and the teacher finds no evidence that the pupil is gaining anything of value from the time and effort expended. This conflict gives rise to another group of problems.

The character of the traditional school has made it customary to learn about everything from books. Teachers have studied in libraries and colleges the things about which they were to tell the pupils in their classrooms. Everything to be learned was logically organized by the teacher or textbook writer. Pupils were tested by asking them to reproduce the outlines of discussions which had been prepared and presented by mature academic minds and from technical points of view. The natural desire of the pupil, on the other hand, was for personal, first-hand experiences with the facts and phenomena. While the pupil might have been interested in how a thing goes and what good it does, these points have often been overlooked in the effort of the school to make sure that the phenomenon was given the correct scientific name and classification. This insistence by the school that the pupil should look at things through adult eyes has created annually a large crop of child problems.

The primitive doctrine of "no lickin', no larnin' " has held its place in the schools remarkably long. Although actual corporal punishment is becoming rare, the schools generally hold tenaciously even yet to their beliefs in the efficacy of punishing pupils for wrongdoing. E. L. Thorndike reports that he can find no evidence whatever that punishment strengthens in any way the tendency of a child,

or of any other animal, to make the right reaction. Punishment of a wrong response does not even reduce the number of responses possible by eliminating the one punished. There is much evidence that many of our most difficult child problems have been greatly complicated, if not actually produced outright, by the false theory of punishments commonly held and practiced by our schools.

In addition to these conflicts between school traditions and the child's nature, there are some very serious conflicts between the complex demands of modern life and the natural characteristics of human beings. Human nature changes slowly. As Kipling says,

> We are very slightly changed
> From the semi-apes who ranged
> India's prehistoric clay.

Human nature is fairly well fitted for the primitive life in which each individual had a part in every phase of the community life. By nature we all crave the variety, the simple unity, and the complete understanding of our own places in the scheme of things which characterized primitive communities. But such complete understanding, integration, and variety is not possible in modern city life. There is much that is hard to understand, and there is still more that is entirely beyond our abilities to control or to influence.

The complexity of industrial life is growing at such an accelerating pace that no one can hope to keep up with it. The personal touch and personal response which original human nature requires are rapidly becoming more difficult. In the midst of all this seething mass of great impersonal forces and unnatural requirements the child finds himself with a primitive nature that demands personal attention, sympathetic understanding, and "wholeness." While every force of the traditional school and of modern life seems to be forcing him to divide himself into segments which have little unity or relation to each other, his inmost nature demands wholeness and integrity of personality. These are some of the mysterious forces that are creating the problem of the whole child which we are seeking to solve. Is there a solution? Can we develop a solution? Who knows?

As I see the situation, there is no single formula that will solve the problem of the whole child. Each individual child problem is a combination of many different hereditary and environmental factors and therefore constitutes a somewhat different problem from that presented by any other pupil. Many of the factors entering into a child's problem are entirely beyond the control of the school, a situation which makes it necessary that a next best solution be worked out, or a third best solution. However desirous we may be to do the

best thing for each child, it will usually be necessary for us to do the best thing possible under the circumstances.

Although the problem of each child must be worked out in terms of his own particular circumstances, attention should be called to the fact that it is the whole child rather than the mere sum of his various parts that constitutes the problem. Mr. Judd's statement at Detroit that at one moment he is a financial self, at another moment a vegetative self, at another a religious self, and at still another moment a pedagogical self overlooks the significant fact that in all these situations he is Charles H. Judd. An adult might, perhaps, train himself to perform religious rites without the presence and participation of his intellectual self, but children would probably find any such dissociation of their personalities difficult, if not impossible. Most human beings find it quite beyond their powers to forget or to ignore at any given moment the behavior they have exhibited at other times and in other phases of their lives. The full solution of a child's problem must involve every phase of his being, organized around his entire personality as an active, living whole.

In order that the problem of the whole child may be properly solved, our solutions must be worked out in the heat of actual life situations. We cannot work them out in the laboratory, and then take them out to the child with any confidence that they will be effective. In order to know the child's vital attitudes, purposes, and objectives, which are central factors in each solution, we must enter into the life he is living and in which the proposed solution must function. We must see not only the present conditions of the child's life, but also his most probable future. All of this requires an intimacy with the child which can only be acquired in situations which are much more real and vital to the child than the usual schoolroom.

The solution of the problem of the whole child requires the most expert services of a master diagnostician. While knowledge of school subject-matter is absolutely necessary, it must be subject-matter that is known from the point of view of what it will do for pupils of various types. There are hundreds of teachers of English, for example, who know their subject sufficiently well to pass difficult examinations in it, but there are relatively few who know how to inspire children to enjoy writing and speaking English. Knowing a subject does not guarantee knowledge and skill in using that subject in the solution of a child problem.

In a similar manner, one who would solve child problems must know the curriculum as the sequence of steps which a child takes most naturally in developing skill, knowledge, and more mature points of view. One must be well equipped with teaching methods,

but these must be clearly recognized as special embodiments of the fundamental principles of learning, so that other sound methods may be employed when something arises to make unavailable the method first chosen. Ingenuity in modifying and adapting available means to desirable ends is probably one of the most important requirements for success in solving childhood's problems.

All of these characteristics assume that the solution of the problem of the whole child is as much a matter of individual diagnosis as of educational treatment. It is my honest belief that expert educational practitioners of the future will spend much more time in securing and in studying accurate data regarding their charges than in teaching them. The modern doctor of medicine spends relatively little time in mixing and administering drugs to his patient, but a relatively large amount of time in observing and checking the symptoms possessed by his patient. There is every reason to believe that education will develop along the same lines, and that solving the problem of the whole child will involve as much or more time in diagnosis than in treatment.

Perhaps it is now time to raise the question of how the members of this section of the Ohio State Educational Conference enter into the solution of the problem of the whole child. I realize that in attempting to be specific at this point I am likely to say things which may not be in harmony with your beliefs and practices, and that you may on that account discredit all that I have already said. Let me assure you, however, that my suggestions are made as an outside observer without prejudice or departmental jealousy, and that they are made humbly and in a spirit of helpfulness. Some of them may be impractical, but all are made with the best welfare of the whole child as their objective. I offer them for your consideration and reflection rather than as demonstrated principles of action.

It seems quite obvious to me that attendance supervisors, school nurses, and visiting teachers are neither the chief diagnosticians nor the chief educational agents involved in solving these problems. The regular teacher of the school should prepare for and should assume the duties which I have been discussing, but each of you must contribute extensively to her understanding of the smaller number of pupils who come under your care. If one of you tries to deal with the child's attendance habits, another his health habits, another his personality traits, and the teacher his mental habits, the problem of the "whole child" will probably be made worse rather than better.

My conception of the task of the attendance supervisor in solving the problem of the whole child is that he will discover why the pupil

is not in school, thus providing the principal and teacher with information that will enable them to make the school more attractive to the pupil. In other words, the attendance department should help to cure the school as well as the child. The older idea that the truant officer should overpower the pupil and frighten or force him back to a disagreeable place called "school" did not solve the problem of the truant child. Impressing the child with the power and authority of a hateful institution is not likely to help greatly in adjusting him to society. On the other hand, an attendance department which actually removed personal difficulties and helped to keep the school from becoming dull would make a real contribution.

In a similar manner, the school nurse may help the teacher to discover the physical needs of the individual pupils and to modify conditions in such ways as will make for more wholesome living. By making the teacher sensitive to the effects and symptoms of poor health, the nurse can probably accomplish more than by taking the full responsibility herself for maintaining good conditions. Health attitudes and habits that are developed under the regular teacher's inspiration are possibly more permanent than those set up during a special health period under a nurse. In short, although there is much immediate service which a school nurse can do, her greatest contribution to the solution of the whole-child problem can probably be made through the child's regular teacher.

The visiting teacher's contribution to the problem is in most cases of the same sort. She comes in as an expert in the diagnosis of social and personality problems, and in the most difficult cases she should probably take over the entire task of diagnosis and treatment, but for the great majority of the pupils the visiting teacher should make her contribution through the regular classroom teacher. It is possible for a visiting teacher to inspire and to encourage the regular teacher until she can actually prevent most of the problem cases from developing. In other words, while it is too much to expect all classroom teachers to become expert social-case workers, it is essential that classroom teachers should acquire the social attitudes and many of the techniques of the visiting teachers.

In conclusion, then, it is my suggestion that in addition to the special cases which each of you here must handle as experts in your respective fields, your greatest contribution to the solution of the problem of the whole child will be measured by the extent to which you inspire and help the regular classroom teachers to meet their problems wisely. If regular teachers everywhere can be taught to look at their task as one of solving the problem of the whole child, there will be far less work for the members of this group to do.

Continuous Census at Toledo

By R. E. DUGDALE[7]

The annual school enumeration before 1928 was taken during the month of May, by means of a house-to-house canvass. Records were set down in books, one for each district, in the order in which the homes were visited. Experience proved that the information obtained in this house-to-house canvass was too inaccurate for permanent records; hence, after the cards were checked through the schools in the fall, they were disregarded completely. The books were used as an index to other school lists, but because of their poor arrangement they were of little value. Each fall there remained more cards unaccounted for, and during the year a considerable number of children for whom there were no records were brought to the attention of the Attendance Department. It became evident that this plan was entirely inadequate, and the installation of a continuous census was begun in May, 1928.

The present system was established with the following purposes in mind: to provide a close check on all the children in the school district, to complete transfers in minimum time, to obtain a complete list of tuition pupils, to verify statements of applicants for work permits, to maintain an index to all other information on the child, and to secure the necessary information for state and county reports. The new system seems to have met successfully all of these requirements.

At the close of the first week of school each year, every teacher in public, parochial, and private schools fills out a census card (Form 402) for each pupil in her class, or conference group in the case of high-school teachers. These cards are sent to the Census Department where they are first counted by age. This is done with the use of a sorting file labeled by years and the corresponding ages at the time specified by the State Department as required in the annual report. These numbers are set down on the enrollment record card (Form 415), which is used to record changes in enrollment throughout the year.

The name cards are then filed alphabetically, and during this process they are flagged for different purposes. If a card shows that a child's parents live outside the school district or if the address of the child himself is outside, his card is flagged with a blue signal so that the tuition clerk may examine his card to determine whether or not he is a tuition pupil. If a card is checked in the lower left-hand corner to denote some defect, it is flagged with a yellow signal so

[7] Assistant Superintendent of Schools, Toledo.

that the list of handicapped children may be readily made up when it is called for by the State Department. Cards for children who procure physicians' certificates excusing them from school are flagged with green signals. Cards for those children who because of low mentality have been dismissed from school by the State Department are flagged with an orange signal.

After the name cards have been completely filed, they are checked against the name file of the preceding year. The older cards which are duplicated are destroyed, and the names of those whose cards do not reappear are given to field workers (Form 447). These cases are checked and rechecked until the children either enter school or procure a work permit or physician's certificate. If a child has left the school district, has become of age, has married, or if there is any other reason why he should be dropped from the active files, this reason is noted briefly on his card, and it is filed away in the inactive file. In this way there is a name card for every child in our school district, since the installation of the system, in the active file if he is still in our schools and in the inactive file if he has been dropped previous to the present year.

When the checking has been completed, the information on the individual name cards is transferred to the family address cards (Form 403, a blue card for colored families). These are filed alphabetically by street and numerically by street number. Children not in their proper schools are readily shown up in this file. The street files are retained separately by year.

The records are kept up to date through weekly reports from every school. On this report (Form 404) are listed the new enrollments, transfers, withdrawals, leavings, and changes of grade or address. These are posted on the individual and family cards, and additions and subtractions are recorded on the enrollment record cards (Form 415). One of these cards for each school is filed in a folder with the weekly census reports from that school. The data on these cards are consolidated for the annual state and county reports. In this way there is an accurate count of all cards without removing them from the files.

The cards from the schools are supplemented with cards obtained by twelve enumerators working full time during one month of each year. They cover the entire school district, obtaining the names of all who are not in school, the pre-school children, the handicapped who are not able to attend the special classes, and those in out-of-town schools and institutions. Some time ago the principals of the public elementary schools were requested to ask the pupils to turn in the

names of any children between the ages of six and eighteen living in their block and not attending school. The names were sent to the Census Department and checked through the files. It was found that practically every child reported as staying at home had been authorized to do so. This was but one proof of the efficiency of the new system.

Transfers are handled by a definite routine. When a child has been reported dropped from one of the schools, his card is taken out and placed in a temporary file indexed by date. The card is replaced by a red circular card upon which is written his name and the date he was dropped. If after a reasonable length of time the transfer is

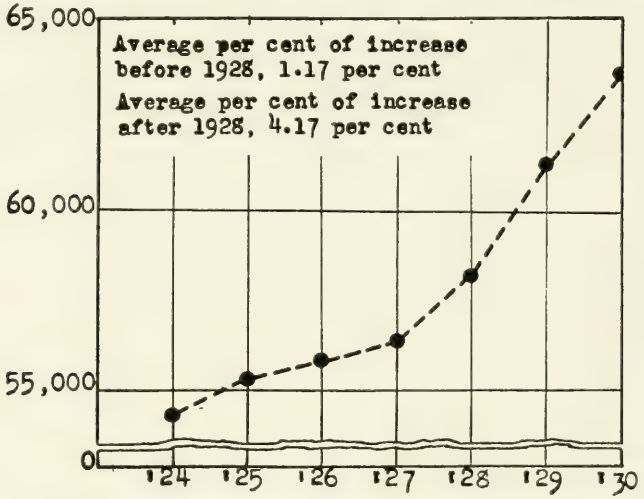

Fig. 1. Enumeration figures for three years before and three years after the installation of the new system.

still incomplete, the case is given to the attendance officer for investigation. It is for this reason that the temporary file is indexed by date. When a child is reported moving out of our school district, a transfer post card is filled out and mailed to his destination. Incoming transfers from out of the city are checked immediately and investigated by attendance officers if necessary.

Chief among the advantages of the present system of continuous census is the fact that it represents a more complete count of all children of compulsory school age living in this school district. In addition, the census files contain a record of all those attending school who are not within the compulsory school age-limits as well as those

living outside and attending school in the district. Figure 1 shows enumeration figures during the three years before the three years after the installation of the new system.

The fact that the new system surpasses the old in accuracy as well as completeness of count is best shown in the following report of an investigation conducted in May, 1930, by Mr. Arch O. Heck, of Ohio State University, and twelve senior students from the Department of School Administration. The twelve students, working in twelve different parts of the city, made a house to house canvass for three days with the following results:

Number of names brought in 4,480
Number of names missed by students 99
These were checked against current school records as well as the census file. This number included only children living at addresses marked "no children," and children whose names had been deliberately withheld because other members of their families were listed.
Number of names for whom we had no census card 12
Attending school but the teachers failed to send in their census cards 7
Number for whom we had no record and who were not in school 5
Number of mistakes in spelling 50
Checked against lists as well as census file.
Number of mistakes in birth dates 89
Age records on census cards are taken from the cumulative school records which are verified when the child first enters school.
Number of incomplete records 45
This included cards lacking the grade, or the name of the school, or part or all of the birth date. The persons giving the information to the enumerators were not able to supply these data.

With more complete and accurate records, it follows that a better check is possible. In the present system, when once a child has been enumerated, he is not dropped until he is no longer subject to the compulsory-education law. Experience has shown that the greatest number of violators are to be found in the fifteen-, sixteen-, and seventeen-year-old group. In May, 1928, when the new system was inaugurated, there were 304 children working without permits, some of them not eligible for permits. In May, 1930, there were only 16, most of whom were in the hands of the officers. This is

due to the fact that the group of fifteen-, sixteen-, and seventeen-year-olds of 1928 have now become of age, and those who belong to that group from now on have been in our files long before there was any reason for them to violate the school laws.

The census files themselves are invaluable in the office. The record of any child who has lived in the school district at any time since the installation of the system may be quickly and easily located in the name files. If the exact name is not known, the record may be located as readily in the street file. This file is also used to good advantage in the placing of school-district lines as the exact number of children of any age or grade in any given district may be obtained.

The files are used constantly by other departments of the Board of Education, and information is also available for the police department, juvenile court, social-service federation, and public library. Under the old plan tuition collections were dependent upon records sent in by the schools. It was evident that many cases, especially the parental cases, were never brought to the attention of the tuition department. Under the new plan the tuition clerk is able to examine all records to determine which are tuition cases. As a result tuition collections have been increased and a great number of non-resident pupils transferred to the schools responsible for their education.

The census of 1928, which was merely an annual enumeration, cost the Board of Education about $4,750. Last year the expenses of the Census Department amounted to less than $5,000. If one considers the increased tuition collections and the amount of money saved by the transferring of tuition pupils, the new system with its many advantages is operated on a yearly budget which is much less than the cost of the former annual enumeration.

Improvement of School Attendance

By MARY RUSSELL MARKSBURY[8]

THE REVIEWING OF A NUMBER of studies made by authorities in search of a satisfactory approach to the problem of non-attendance revealed certain characteristics common to all. Each adopted the plan of studying the absence of an entire school, several schools, or even a whole state, and each also grouped the causes of absence according to some three or four general schemes. In contrast to this the present study varies in three respects: it attempts to study each habitual absentee in order to learn as much as possible of his home

[8] McKinley Junior High School, Columbus.

and school life; it deals with a comparatively small group of the pupil personnel; it includes a number of case studies. The case-study method proved to be an ideal tool, since a preliminary survey indicated that a comparatively small group of these junior high-school pupils contributed the major part of the absences.

An initial step in determining the plan to be used consisted of an actual count of absence of the entire school and the compilation of a frequency table to be used as a basis of comparison for succeeding semesters. From this it was possible to prepare a list of chronic absentees. There were no special campaigns for improving attendance, but a definitely organized plan was laid out to interview the pupils, their parents, and their teachers in order to study the behavior of the members of this group in school and out. In this way it was hoped an appraisal of each case might be reached from a synthesis of these opinions. The problem was thus changed from a general attendance problem to twenty or thirty specific and individual problems. The solutions, as well, became individual.

The school enrollment was increased 31 per cent from September, 1925, to January, 1928, while the number of absences decreased 377. This effected an improvement of 28 per cent for the period under review. The absence for the first and last semesters was classified into three groups: namely, less than nine days, ten to nineteen days, and more than twenty days. The number in the first, or short-absence group, was markedly increased, while the number in the group absent more than twenty days was reduced to about one-fourth by the scheme here described. As the size of the group under vigilance decreased, the percentage of absence contributed by it also decreased. Herein is indicated the effect of a limited group of absentees upon the attendance of the entire school and the extent to which the average can be corrected or improved by concentrated and intelligent attack upon this limited group.[9]

Possibly one should not class the habitually absent pupil as a problem pupil, yet he is a problem in a certain sense. Since he, like poverty, is always with us, the problem must be solved. The teacher who, like the physician, studies the case scientifically and applies a course of treatment more nearly reaches the goal than the one who grows angry at the truant, the sluggard, or the unfortunate. The new emphasis in education calls for the all-round development of the child. The writer found that the most effective method of meeting the situation was to make case studies and follow up the diagnosis of each case with treatment suited to the particular difficulty.

[9] Marksbury, Mary Russell. "Improvement of School Attendance," *Educational Research Bulletin*, IX (September 10, 1930), pp. 325–29.

Health: An Attendance Problem

By ETHEL E. OSBORNE[10]

In spite of encouraging progress in health work, the schools are still faced with many health problems, one of the most important of which is that of illness among school children. Although the means of combating many of the common communicable diseases of childhood have greatly improved in the twentieth century, they are still quite prevalent. It is necessary to know what are the most common diseases among school children in order to improve health through the elimination of illness.

A careful study in Maryland showed that during a school year of 180 days, the average absence of each pupil because of illness was about seven school days, with more illness among the younger children than among those in the higher grades. The common cold was the most prevalent illness, seven of every ten children being absent several times during the year because of this malady.

Figures secured by the New York Commission on Ventilation indicate that the average child is absent eleven schools days out of 180. Out of the six absences due to illness, two are because of colds and associated infections of the respiratory tract, while the other four result from communicable diseases, headache, stomach disorders, and other miscellaneous indispositions.

A recent issue of the *New York Times* quotes the superintendent of the New York schools on the educational and financial value of regularity in the attendance of pupils. The lowered attendance of January, when many children were ill with colds and grip, meant a waste of $200,000 for the city. The superintendent was stressing the health aspect of these absences, and was not recommending any drastic steps for forcing attendance when the health of the pupils would not permit it. According to the annual report of the Baltimore Health Department, school nurses visited the homes of 33,864 sick children who had been out of school for three consecutive days, and found 21,924 cases of communicable diseases which had not previously been reported.

These are not isolated examples of the important relation between health and school attendance. A health survey conducted in eighty-six cities by ten American Child Health Associations revealed a high percentage of absence due to illness—54 per cent in Chester, 38 per cent at Muncie, and 32 per cent in Pasadena. The attendance statistics of Cleveland for 1929 show that of the 18 per cent of the

[10] Supervisor of School Nurses, Cleveland.

total school attendance referred to the attendance officers for home visits, more than 42 per cent of the cases of absence were caused by health conditions.

What can the schools do to stamp out this great problem of absence through illness? Cleveland is organized to meet the situation. The Cleveland Department of Physical Welfare is divided into health service, health education, and physical education. The health-education department is trying to educate the teacher and the child to ways of living which may lessen the tendency of physical disorders resulting from unhygienic ways of living.

This department, composed of fifty-six nurses, one audiometer worker, one metabolism worker, thirty-four doctors, and seventeen dentists, tries to watch the health of each school child. The program is divided into the following activities, with the main idea of keeping the child in school and in good physical condition:

1. Inspections of individuals, and of groups in classrooms for cleanliness and for first signs of contagion
2. Dispensary service, first aid, and minor treatments and dressing to check infections which save many children absence from school
3. Immunization against diphtheria and smallpox to cut down absence from these diseases
4. A thorough physical examination given all special cases brought to the attention of the doctor by the social worker, teacher, or nurse, and routine examinations for all children from the kindergarten through the ninth grade
5. Correction of all physical defects following the careful physical examination, by means of parent consultations at school and by home visits of the nurse (the number of parent consultations at school generally equals the number of home visits made)
6. Health talks given to parents and to children concerning good health habits and the value of keeping the child fit for school and for after life

In most districts slightly less than one-half of the home visits of the nurses are for absence caused by illness and exclusions, and a little more than one-half are to urge correction of physical defects and good health habits. At the time of a scarlet-fever epidemic, 99 per cent of the calls were for illness, the nurse checking on all one-day absences. Exclusions for illness, scabies, conjunctivitis, ringworm, and similar diseases must be followed by home visits unless the child returns to school at the time stated on his exclusion slip which is made out in triplicate, one for the attendance officer or principal, one for the child, and one for the nurse's file.

Long absences caused by chorea, heart trouble, fractures, and operations must also be checked frequently to see that the child is

receiving good care. There is often a possibility of the sick child remaining at home for an unnecessary length of time. Absence of one-half day every school week for clinic visits should be carefully investigated as there is always danger of irregular clinic attendance leading to truancy.

In some buildings all absences are posted on the bulletin board, and the name is crossed out by the child's teacher or by the nurse as soon as the child returns, if the child was excluded. Other buildings allow no child to return to school after a two- or three-day illness until he is inspected by the nurse or the school doctor; this adds extra work to the duties of the nurse, but is effective in checking on absence. It is sometimes impossible for the nurses to check on all two- or three-day absences even when illness is known to be the cause.

Many parents come to school with the child after an absence because of illness, and, in cases of contagion, much can be done in educating the mother concerning the value of quarantine. Children can help in eliminating absence by creating a classroom sentiment against absence. Contests are sometimes arranged as a means of sharpening public interest in attendance and health habits, a cup or trophy being offered to the best school or classroom.

What is the solution of this great question of illness? Should the health program be reorganized so the nurse could visit all three-day absences when a known health problem is involved, or should the attendance officer visit all absences first? Would he notice first signs of contagion, could he do any more or less than the nurse, or should the principals urge a new system which will put more responsibility on the teacher and children? These are difficult questions.

Training for Visiting-Teacher Work

By ORVILLE G. BRIM[11]

The type of training for the visiting teacher depends upon the function which is to be served. Those who approach the new undertaking from the conventional public-school angle see the visiting teacher primarily as an attendance officer of a new type, a person who is to solve the problem of non-attendance by study, diagnosis, and constructive measures rather than by the mere application of legal pressure. Those who approach the problem from the social point of view think of the visiting teacher primarily as a social worker attached to the school for convenience of administration.

[11] Ohio State University.

The third point of view is that this worker is a member of the school staff, one whose responsibility is to facilitate the education of school children by the application of the methods of clinical psychology, mental hygiene, and social-case work to the study and adjustment of cases which have been referred to her because they present special problems of scholarship, behavior, personality, or social maladjustments in the school, in the home, or in the community.

In this paper the third conception is accepted. To render this service what preparation is necessary? In the first place, the visiting teacher should be a successful teacher with two to five years of experience. This is necessary in order that she may know the school situation from personal experience for, unless she knows its regulations, its demands and limitations, the conflicts and maladjustments that arise between a dynamic child and this impersonal institution, the various ways and means to solve these conflicts, to adjust the scheme to the misfits, the endless demands upon a classroom teacher's time, she will be unable to analyze the problems effectively, to sympathize and co-operate intelligently with the teacher, or to advise her wisely.

The visiting teacher must be an expert in the field of educational psychology, for many problems have their origin in learning difficulties. The techniques of clinical psychology are demanded. The cause of maladjustment may lie in the realm of emotions, fears, repressions, a sense of inferiority, extreme lonesomeness, despondency, an anti-social attitude, unwholesome conceit, or one of many others. Here mental hygiene is demanded. She must know social life in order to deal directly with social forces, social conditions, and social agencies, and with adults who are immersed in this actual industrial, economic, and social whirl. There must be acute familiarity with family life, especially among the poor; recreational facilities, leisure-time activities, and social resources for the young and old; social standards and relations in social morality in the lowest third; conditions of labor and unemployment; problems of health, food, and clothing in large families of meager incomes; relief agencies and their method of work.

In addition to this general knowledge of social life the visiting teacher needs extended training in social-case work, for such a position includes the improvement of the quality of education offered by the home, the gang, or the community. Unhappy relations between husband and wife, between parent and child, between neighbors or relatives, economic trouble, and the like challenge the visiting teacher. In such situations, tact, intuition, good judgment, and personality are at a premium. The visiting teacher must deal with children many of whom are timid, resentful, repressed, antagonistic, educational or

social misfits. The same is true on the adult level. Parents are frequently ignorant, selfish, suspicious, bitter, anti-social. Not only does this first obstruction face the visiting teacher, but penetration into the innermost recesses of these cankering personal wounds is necessary. The teacher must win confidence, must become the father confessor. Social sensitiveness, common sense, sympathy and breadth of understanding, gentleness, and a sincere and unselfish desire to help are conditions of success.

One other condition of success as a visiting teacher needs mentioning. The modern conception of education must have been grasped. Attention must be centered upon the growing child, the school curriculum, school standards, and methods as subordinate to his best development. Child welfare must be placed above school regulations. Moreover, there must be recognition that education is character building rather than lesson learning, and that character building for better or worse is occurring every moment of the child's waking day, yes, even when he is sleeping. The visiting teacher becomes a student of the child's whole life. The task is the organization of the whole environment to approved educative ends.

Animal Ecology of the Tropical Rain Forest

By W. C. ALLEE[1]

THIS PAPER IS BASED ON MY EXPERIENCES on Barro Colorado Island in the Canal Zone in Panama. The island is thickly forested throughout almost all of its six square miles of extent. Before the building of Gatun Dam the present island was the largest of the old hills rising above the valley of the Chagres River, and consequently it is now the largest of the islands in the man-made Gatun Lake. It is located about an hour's ride either by outboard motor or by native boatmen from Frijoles, which in turn is about an hour by train from Panama City. In 1923 the governor of the Canal Zone decided that this island should be set aside for a forest preserve. It is under the immediate control of the Institute for Research in Tropical America, of which Dr. Thomas Barbour, of Harvard University, is chairman of the Executive Committee and Mr. James Zetek, of Balboa, Canal Zone, is Resident Custodian.

There are certain widespread misconceptions concerning tropical conditions and tropical life. One of the first of these is that life in the tropics is necessarily hazardous to health. There are many tropical localities in which this appears to be true, but the Canal Zone is not one of them; there the health of the casual visitor or permanent resident is well guarded. In the two main cities of Panama, Panama City and Cristobal-Colon, the streets are clean, garbage is carefully destroyed, swamps are drained, breeding grounds of mosquitoes are carefully destroyed, so that these cities within nine degrees of the equator are more free from mosquitoes or disease-bearing flies than is Chicago in summer. The climate does not necessarily "get" white men of temperate habits, for some of the most energetic men I know have lived in the Canal Zone for almost two decades without apparent loss of physical or mental vigor.

On Barro Colorado Island itself the report of the Biological Station (1929) states that

about twice a year blood smears are made of all employees on the Island. These are examined at the Board of Health Laboratory for malarial

[1] University of Chicago.

parasites. Thus far we have had but little malaria among our employees. It is not necessary to take quinine while on the Island. The dangers from amebic dysentery are practically nil, because the drinking water is contained in a large redwood tank filled with rain water from the roof of the main laboratory.[2]

Even before this water supply was installed, by boiling the water or by treating it with appropriate chemicals, amebic dysentery and other water-borne infections could be avoided. A distinguished bacteriologist who has just returned from a sojourn at Panama City, whither he went to study enteric fevers, reports that the place was entirely too

TABLE I

DIFFERENCE BETWEEN TROPICAL AND TEMPERATE CLIMATES

	Record Temperatures			Average Annual Relative Humidity	Average Annual Rainfall
	Average July Temperature	Any Month			
		Highest	Lowest		
(1)	(2)	(3)	(4)	(5)	(6)
Mobile	80	102	—1	79	62.0
Denver	72	105	—29	52	14.0
Washington	77	104	—15	72	43.5
Key West	84	100	41	78	38.7
Chicago	72	103	—23	74	33.3
New York	74	100	—13	72	44.6
New Orleans	81	102	7	78	57.4
St. Louis	79	107	—22	70	37.2
Boston	71	104	—14	72	43.4
San Francisco	57	101	29	80	22.3
Oklahoma	80	108	—17	70	31.7
Charleston, S. C.	81	104	7	78	52.1
Galveston	83	99	8	81	47.1
Norfolk	78	102	2	.....	49.5
Colon, R. P.	80	93	66	84	127.8

clean for his scientific needs. The results obtained by the application of modern preventative medicine to these century-old centers of pestilence deserve even more attention than they have received.

A second group of misconceptions concerning life in the tropics centers about climatic conditions there. One of these misconceptions concerns the extreme heat. It will surprise many teachers of science to learn that United States weather bureau records for Colon, Panama, located only 600 miles north of the equator, show that the highest shade temperatures recorded are lower than for Boston, New York, Chicago, or Denver, and that the mean monthly temperatures for July, the hottest month of the year in the United

[2] National Research Council. *Fifth Annual Report.* Distributed by the Division of Biology and Agriculture.

States, is as high or higher in our southern cities as in tropical Colon. These and other facts are given in Table I.[3]

There is a real difference between the climate of Barro Colorado Island and of Chicago. The shade temperatures at the latter range from −23° to 103° F. with mean monthly temperatures of from 23° to 72°, while the rainfall averages about three inches per month throughout the year. Near Barro Colorado Island, on the other hand, the extreme range in shade temperature is from 66° to 93° F., while the monthly means vary only from 79.8° for February to 81.2° for April. The rainfall varies, however, from a mean of 1.11 inches for February to one of 16.2 inches for November. Eight inches or more of rain may fall in a single day. In other words, the seasonal periodicity in Panama, as in so many parts of the tropics, is based primarily on variation in rainfall, while the seasonal changes in and near Ohio are based on variation in temperature. From the point of temperature change, it is the difference between day and night, rather than between seasons, that is outstanding. As far as temperature is concerned the night is the winter of the tropics.

Another current fallacy concerning tropical climate is the report of its constancy, which is suggested even by the discussion just given. This is distinctly wrong; as Visher has shown, a careful student will speak of tropical climates, not of tropical climate.[4] This is well shown on the narrow Isthmus of Panama, where at Ancon on the Pacific side it rains about 180 days a year, while at Culebra, just across the continental divide, there are about 200 rainy days, and at Colon on the Atlantic coast, a distance of some thirty-five miles from Panama, there is rain on over 255 days per year.

A third major misconception is that the tropical rain forest or "jungle" predominates in tropical lands, while the facts are that in the tropics of the world at large there are as many or more square miles of other plant formations as of the "jungle" type of forests. Rainfall appears to be the factor which determines whether there will be forest or grassland; if there is over 72 inches of rain, a rain forest develops.

When one enters the tropical rain forest, one expects to find palm trees of various sorts, and tree ferns growing in dense stands, together with the more usual sorts of underbrush and with the whole bound into an impenetrable mass by various sorts of creepers and lianas. All these elements may be found in the tropical forests, but

[3] Republished from *Jungle Island,* Allee and Allee, from data originally compiled by R. Z. Kirkpatrick, chief of Division of Hydrography and Meteorology of the Canal Zone.

[4] Visher, S. S. "Variability vs. Uniformity in the Tropics," *Scientific Monthly,* XV (July, 1922), pp. 23–25; *Ecology,* IV (January, 1923), pp. 1–10.

to my great surprise, I found that Ridgeway's comparison of the aspect of a tropical forest with that of the lush forest growth in the river valley forests of the Wabash River held in as many cases as did the more conventional picture.[5] To be sure, there are groves of palms growing so thickly that no other tree can gain a foothold, and it is equally true that cut-over lands or old roadways may be so overgrown with vines and shrubs that one can only make progress by hard work with a machete; yet on the whole, as Beebe says: "The age old jungle is kind to the intruder."[6] One can walk through much of the Barro Colorado forest with little more difficulty, if as much, as is encountered in a primeval bottom-land forest in Ohio or Indiana.

In the tropics one expects to find snakes, many snakes, and especially deadly poisonous ones. One reads of them overhead hanging from the branches, and underfoot hiding among the leaves. It came as a distinct shock to me to fail to see a single snake until noon of my third day in the rain forest; this one was not more than six feet long and a relative of our black snake, non-poisonous, of course. In two months' time spent in traveling through the forest, frequently with four or five of us in the party, often turning over all logs and other likely objects, I managed to see twelve snakes in all, and none of these was really poisonous. The two back-fanged ones that Ditmars calls mildly poisonous are not a quarter as deadly to man as were the copperheads I found and killed as a boy in the woods of Indiana. One of my helpers brought in a poisonous coral snake such as may be seen in our southern states. The following summer in the rainy season when the snakes are more abundant, a highly poisonous fer-de-lance was found near the laboratory on Barro Colorado Island. My experience with regard to snakes has been duplicated by other observers, including K. P. Schmidt, of the Field Museum, a student of snakes who found almost none while on an excursion to Southern Brazil during their winter season.

One hears much of the brilliant colors of the tropical animals, especially of the tropical birds and butterflies, and there are many brightly colored forms to be found. However, there are two kinds of misconceptions current on this point, and the suggestion that brilliant coloration is directly related to climatic conditions remains to be proven. Many tropical genera of birds are striking to us both because of individual brilliancy of color and variety of color pattern, but the

[5] Ridgway, Robert. "Some Observations on the Natural History of Costa Rica," *Smithsonian Institution, Annual Report*, 1921. pp. 310–11.

[6] Beebe, William. "Convict Trail," *Atlantic Monthly*, CXXII (September, 1918), p. 322.

proportion of brilliant forms among birds is about the same as in our latitudes, since there are many dull-colored forms. It is interesting to note that even the most brilliantly colored bird does not necessarily appear so when seen against the leafy canopy of the rain forest. Further, the most brilliant are not more striking in their coloration than are our waxwings, goldfinches, scarlet tanagers, or wood ducks. Bates,[7] a noted traveler, reports that of the four species of kingfishers which he found on one tropical island, none is so brilliantly colored as are the European forms, and of the eight genera of butterflies common to the Amazon valley and Central Europe, only three have more beautiful species than are found in Europe. The northern peacock butterfly, the purple emperor, and the swallowtail will stand

TABLE II

PHYSICAL CONDITIONS OF THE TROPICAL RAIN FOREST

Strata	Relative Light Intensity	Wind-Velocity in Miles per Day	Maximum Temperature Variation in a Month	cc. Water[a] Evaporated per Day
(1)	(2)	(3)	(4)	(5)
8. The air above the forest	442	240	.....	.....
7. Trees extending here and there above the main forest roof	.....	.....	.....	.....
6. The main forest canopy	25	10	29.7° F.	4.0
5. Lower tree tops	6	.....	17.1° F.	.....
4. Small trees	5	.....	.....	.....
3. Higher shrubs	.....	1	.....	1.9
2. Forest floor and low herbs	1	.....	11.7° F.	.....
1. Subterranean stratum	0	0	Slight	Slight

comparison with the tropical species.[8] I do not mean to belittle the bright, clearly marked, distinctly outlined color patterns of tropical birds, butterflies, frogs, and beetles, but merely to put them in their proper place with relation to our own beautiful species.

The widespread notion that there are no good singers among tropical birds furnishes a final misconception to be considered which persists even though it has been emphatically denied by many travelers from Wallace and Darwin to the present. The birds of the tropics do not concentrate their singing in one great spring outburst as much as do our own, but mating songs are well distributed throughout the year.[9] The snow-hooded bell bird of Barro Colorado Island illustrates the point.

[7] Bates, Henry Walter. *The Naturalist on the River Amazon*, p. 220.

[8] Adapted from Hesse, R. *Tiergeographie.*

[9] *Ibid.*

On account of the closeness of stand and the fact that the trees are well bound together by lianas of various sorts, and further on account of the height attained by many of the trees, we find that the tropical rain forests, when well-developed, present eight clearly marked strata. Each of these presents definite physical conditions and possesses a fairly characteristic set of animals which can be analyzed in part even in a general lecture (*see* Table II). Lists of characteristic animals of the different forest strata are given and their relationships are discussed in my paper published in *Ecology*.[10]

In conclusion, we may list the following general statements regarding the ecological relations of animals of the tropical rain forest without discussion and without noting certain exceptions and reservations.

1. Mammals and birds of the tropics, the so-called "warm-blooded animals," tend to be smaller in size than are related forms in cooler climates.
2. Reptiles and insects, representing so-called "cold-blooded animals," tend to be larger in the tropics.
3. Tropical forests tend to be occupied by many species with relatively few individuals per species.
4. With the increased temperature there comes a shortening of the developmental period which expresses itself as a speeding up of the life cycle.
5. Ants are characteristic insects of the tropics and termites are still more so; some animals feed only on these two sorts of insects and have powerful claws and long sticky tongues with which they open and plunder the ant and termite nests.
6. Reptiles have their greatest number of species and of individuals in the tropics. Birds are more abundant in the tropics than elsewhere. The same statement holds for insect-eating bats, while fruit-eating bats are confined to the tropics.
7. Animals limited to nectar and pollen feeding are limited to the tropics except for summer migrations into non-tropical regions.
8. With the abundance of tropical species one finds that the struggle for existence between animals is extraordinarily intense in contrast with the relatively slight struggle with inanimate nature. In accord with this development we have an increase in the number and variety of poisonous animals in the tropics.
9. If one disregards certain common animals such as ants, termites, heliconid butterflies, millipeds, and the like, most species occur only sporadically. Even among birds mixed flocks are common.

[10] Allee, W. C. "Distribution of Animals in a Tropical Rain-Forest with Relation to Environmental Factors," *Ecology, VII* (October, 1926), pp. 445–68.

Beebe reports seeing twenty-three species of birds in a flock of twenty-eight birds.[11]

10. The trees usually do not exist in stands of single or few species, but individuals of different species are scattered more or less singly through the forest. Hence, fruit-eating animals or any animal limited in its food habits can occur only at scattered places or by migrating between favorable food plants.
11. In association with the nectar-feeding habit of birds, many flowers depend on birds for their pollination.
12. The lack of seasonal periodicity in many tropical climates is reflected in the lack of periodicity of fruiting or breeding season of plants and animals, and in the distribution of reproduction throughout the year.
13. Daily cycles are more clearly developed than in temperate latitudes.
14. Tropical birds lay fewer eggs than do their relatives in the north; this is in part associated with the shorter day there than during our summer months, and consequently the day-feeding birds are handicapped in their search for food.
15. In many tropical regions wet and dry seasons are substituted for warm and cold ones and afford a well-marked periodicity for plant and animal life.
16. Apes, monkeys, lemurs, and edentates are limited chiefly to the tropics.
17. The lack of horizontal air currents in the dense forest hinders the activities of animals that hunt by scent, and the thick plant growth makes for poor visibility. For the latter reason vultures are not found in thick forests.
18. The sense of hearing is the important forest sense and seems to hold monkey bands and flocks together. The noisiness of these tropical groups has been well advertised.
19. In general ungulates of the forest are small and can wind their way through the underbrush. Other ground-dwelling mammals are large and strong and can force a passage, as does the elephant.
20. Many animals of all sorts have developed the arboreal habit; various climbing mechanisms have been developed, claws, hooks, apposable toes, sucking pads, and prehensile tails are examples. Many insects, birds, mammals, and reptiles whose relatives outside the tropical rain forest tend to be ground-dwelling have developed the arboreal habit.

[11] Beebe, C. W., Hartley, G. I., and Howes, P. G. *Tropical Wild Life in British Guiana.*

21. Tree-dwelling snakes and lizards are either long, whiplike, or heavy-bodied with prehensile tails.
22. Climbing animals are limited in size and generally have short limbs.
23. Parachutes have been developed among diverse groups; mammals, including even marsupials, lizards, and frogs have this habit.
24. The depths of the forest are relatively poor in animal life; the forest margins are rich. It follows that savannas with alternating woodland and grassland hold more animals than do woodlands proper.
25. For many animals, including primitive races of men, the depths of the forest furnish a place of refuge from more advanced or more aggressive and better adapted animals.

Learning Situations in Botany

By HOMER C. SAMPSON[12]

Learning situations designed to impart useful information may differ widely in effectiveness. It is still more important in elementary biological courses that attention be given to learning situations that give both motivation and training in the use of information in effective thinking and practical application. A much greater number of effective learning situations are required to replace erroneous concepts of biological phenomena with concepts in harmony with known data than is required to develop concepts entirely new to the students.

Learning situations may be considered as involving a part of a class period, or as a series of minor situations that lead to an objective of a single class period, to one or more objectives of a project lasting through several days, or to the major objectives of a specific course in the subject. For a series of learning situations that lead to an objective of a single class period, the problem of initiating the learning situation is of prime importance. It is equally important that the teacher recognize all the new difficulties the student must meet and master, and that these new difficulties be met in some definite order, preferably in the order of the least difficult ones first.

The learning situations that lead to the major objectives of the whole course involve the acquiring of certain habits, skills, abilities, points of view, and attitudes regarding biological phenomena. To accomplish these objectives it is necessary to have certain types of

[12] Ohio State University.

learning situations reappear repeatedly in every phase of the subject considered in the course.

Among such types of learning situations are the following:

1. Arriving at inferences or conclusions warranted by a specific set of data.
2. Recalling, selecting, and evaluating data pertinent to a particular problem.
3. Recognizing in the classification of biological phenomena different bases of classification, and the retaining of a selected basis throughout the scheme of classification.
4. Arriving at definitions of important biological terms through an analysis and evaluation of the facts involved rather than learning by rote.
5. Recognizing different bases of arriving at a definition, and evaluating the different bases with regard to their fundamental character. As an example, Aristotle used space relations (something from outside the plant) as a basis of his definition of the food of plants. The modern plant physiologist with his much more fundamental knowledge recognizes plant nutrition as a physiological phenomenon and by using physiology as a basis arrives at a definition wholly at variance to that of Aristotle.
6. Carrying over and applying facts and concepts of physics and chemistry to the description and interpretation of biological processes.
7. Employing accurate expression; that is, phraseology that is in accord with cause and effect relations rather than the phraseology in accord with personification of plants, purposeful teleology, and the supernatural.
8. Acquiring the habit of using the scientific method of arriving at conclusions of biological phenomena. This is quite a different process from merely learning what the scientific method is.
9. Distinguishing between what one may reasonably claim to know and what he does not know.
10. Distinguishing between the knowable and the unknowable in natural phenomena.
11. Carrying over and applying the facts and principles of the classroom to a philosophy of life and practical living.

Some Fallacies in Character Education

By C. V. COURTER[1]

THE DEVELOPMENT OF CHARACTER has been traditionally one of the chief objectives of American education. So rapid, however, has been the rise of our commercial and industrial civilization with its demands for more practical educational activities, coupled with a widespread pragmatic view of education, that, until very recently, the character aim of education has been supplanted by the idea of social and economic effectiveness. A number of alarming social trends, however, have brought character training during the last fifteen years once more into the ascendancy. Out of the welter of shifting moral standards, increases in juvenile delinquency, the so-called "moral degradation" of youth, disrespect for law, and the mounting divorce rates has risen the edict, "Schools must train for moral character."

Everywhere today school heads are thinking in terms of education for the development of character. Character-training curriculums are being formulated and announced, and programs for character education are being initiated. The older conception of character training as the inculcation in youth of the standard virtues by process of precept and example has been replaced by the conceptions based on the new psychology that character training is a process, a process that seeks to develop personality traits through participation in an ever widening range of experiences, that seeks to weave these traits, through intelligent guidance, into a composite whole described as an integrated personality, and that seeks to motivate this personality through the development of a group of ideals organized around certain supreme ideals of conduct.

It is evident that such a process is one extremely difficult of consummation. What personality traits shall we select? Shall they number fifty, one hundred, two hundred, or a thousand? What experiences shall we choose, what situations shall we set the stage for? What shall be the process of integration? How shall we develop and organize our ideals? These questions can be answered only after long experimentation, through an extended process of trial and error.

[1] Superintendent of Schools, Dayton.

In spite of the difficulties, announced programs of character training are under way. More properly they should be considered experiments in character training and development, with some application of the technique of experimentation. Some of the fallacies in our method of attacking this problem may be pointed out.

The first of these fallacies is the mistake of considering the program of character education a school program. It is, rather, a community program, the school being merely one of the agencies contributing to the success of the program. Since character is the product of the individual's totality of experience, the first object of attention is the child's complete environment. A comprehensive program of character training must, therefore, include a complete community survey, showing population densities by sections of the community, social centers, playgrounds and the extent of their supervision, public parks and their equipment, churches, schools and their facilities, and housing conditions; a development of character-training consciousness in the community through the enlistment of clubs, parent-teacher groups, and social agencies; and the integration of all factors and agencies through a central organization which may be, but does not have to be, the public schools.

A second customary fallacy in the method of attacking this problem is the failure to educate teachers properly as to the nature of the problem. Unless the teacher who is in immediate contact with the child has a clear-cut conception of the task, a definite attitude toward parents and children, a definite conception of what is known of the technique of character training, and a philosophy of education that places the child in the center of the stage, we can expect mediocre results, no matter how elaborate our list of character-training activities may be. The traditionally minded teacher, employing rationalizing teaching methods, may be very skillful in securing the right answers, but of doubtful effectiveness in modifying behavior in critical character situations. The intellectually arrogant teacher customarily lacks the depth of sympathy and breadth of insight necessary to influence the children's conduct constructively. The teacher who talks the most about moral character and parades the virtues constantly may be far less effective than an enthusiastic coach who aims at good sportsmanship and thinks little and says less about training for character.

The third fallacy is the somewhat common error of regarding training for character as a process distinct in itself and separate from the more formal activities of the school. The fundamental maxim for every teacher is that every worth-while educational activity of the school has a contribution to make to the development of moral

character. Every classroom situation has its moral aspects. It is a character-training situation of value in some degree. A comprehensive program of character training must, therefore, co-ordinate, articulate, and permeate all teaching effort.

The fourth all too common error in character training is the failure to adapt the technique to the child's stage of development. The elementary-school age is the golden age of habit formation. Every effort should be made here to make fundamental traits of behavior habitual by frank use of training methods, employing rewards and punishments to stimulate desirable behavior and to check behavior that is undesirable. This is the period in which fundamental attitudes must be established. Here we need to think less about character and more about specific items of behavior and particular attitudes. With the coming of adolescence there must be a decided change of technique. The egocentric individual is changing into the heterocentric individual. New urges are dominant. Here is the golden age for the development of social ideals and the creation of situations in which these ideals can flow over into social conduct. Here the social self emerges. The need is for an ever present stimulation of conduct toward the higher levels of social living.

Gradually the present, hurriedly conceived listing of character-training activities in the form of programs for character education must give way to experimentation, and, step by step, the programs will assume balance and perspective. The present emphasis upon character training can be expected to increase. The mistakes of the present and the inadequacies of present practice will be steadily repaired as intense study and experimentation develop a reliable technique with which to attack this most difficult of tasks.

Implications of Vocational Guidance

By N. L. ENGELHARDT[2]

THE DISPLACEMENT OF MEN by machines goes on apace. The compressed-air digger supplants the lowliest, and the teletypesetter performs tasks beyond the power of any one individual. Fish are cleaned, cotton is picked, glass is blown, and cigarettes are rolled by mechanical device. The paint brush gives way to the automatic spray, the hand truck succumbs to the endless chain, the cutter's die to an automatic press, and the coal shovel to a stoking mechanism. The machine has invaded the home, the office, and the factory. It

[2] Teachers College, Columbia University.

makes our bread, it bottles the morning milk, it knits our garments, and plows our land. Today's children have been born into a world amazingly different from the world for which the present educational program was projected.

Contrasts in productive power between man and machine are highly significant. The brick machine makes 40,000 bricks where a man could only make 450 a day. One bread-wrapping machine equals twenty human workers. One electric–light bulb machine today does as much as two thousand men could do ten years ago. Not only have the machines displaced men, but the solitary machine worker now employed on the job is frequently of the other sex. Boys and girls have been witnesses to disturbances centering about the occupations of their fathers which have been destructive to incomes and homes. Many men, such as shoemakers and cigar-makers, clothing workers, and all types of construction craftsmen, have been required to surrender skilled callings and to substitute occupations of less importance and in many cases of lower wage.

Daily trips along Riverside Drive over a period of the past year and a half leave some idea of the significance of the true power of the machine. As though by magic, huge piers have risen out of the waters along the shore of the Hudson. Thousands of steel threads have been woven into enormous cables; huge beams and girders have formed themselves into a veritable highway of steel. Concrete pyramids now tower where mere boulders dotted the parkway, and roads have been arched to carry the moving processions of the next generations. The greatest span of the ages has bridged the Hudson. Enormous sums have been spent, and materials of huge size and great quantity have been handled in the process. An astounding feature of this significant achievement is the apparently small number of men employed. Where one might expect to find thousands, one finds only scores. The contribution made by this bridge to the progress of the city and the development of the metropolitan area will be immeasurable. But the daily review of the project in progress leaves the impression that man has receded into the background and that another force has taken his place.

The highest building yet erected by man is just nearing completion. The story of its erection is one complete triumph for the machine. Air compressors have been substituted for human muckers. The stonecutter has watched the unloading of machine-cut stone duly numbered for placement. Electric devices have given a glassy smoothness to the terrazzo, and the floor-tile setter has surrendered his skill to sheets of adhesive paper upon which the machine has already created the design ready for placement. It is said that more

construction will drive away the depression. It should be recognized, however, that building an Empire State skyscraper is an assembly task and not one of fabrication. The metal door trims are made in the factory. The stone decorations are fabricated away from the job and arrive for placement only. The elevators may be constructed many miles away, and their installation involves a minimum of workers. Not only is the erection of such a building distinctly a task of assembling materials, but of particularization of labor specialization. The problem of glazing is divided into a number of jobs, and the painting tasks are differentiated. The enterprise takes on the characteristics of an automaton. Cherished skills and human joy in craftsmanship seem largely to have vanished from the scene.

The work of man in the world has changed and is constantly undergoing further change. The rapidity of change at the present time almost appalls. This kaleidoscopic change requires constant educational adjustment. A searching sweep of social vision, a comprehensive economic knowledge, and an unmatchable administrative skill are needed to cope with the serious problems which attend. Science, with its wide-flung research program, has already outdistanced the educational program for the youth of today. The vocational-guidance program must be speeded enormously to permit the anticipation of future needs and the development of new concepts of vocations and service. Vocational guidance must inspire the administrator to anticipate the future. At present, in the preparation of the individual, there seems to be an educational lag. Educational administration is concerned with the transformation of this lag into a significant handicap for youth.

Not only have the opportunities for life work changed significantly, but the conditions under which man works today within an industry involve new elements. Industry recognizes the problems that are attendant upon the discharge of employees whom the machine has displaced. Industry in this country is on the whole not unsympathetic or cold-blooded under these conditions. The program which has been developed by industry in its own defense has become, however, highly paternalistic. This is not necessarily to be taken as a criticism of industry. It may have been the only discoverable solution.

President Swope of the General Electric Company has stated that there are three fundamentals in industry upon which its security is predicated,[3] satisfactory conditions of work, reasonable hours of

[3] Swope, Gerald. "Management Co-operation with Workers for Economic Welfare." *Annals of the American Academy of Political and Social Science,* CLIV (March, 1931), pp. 131–37.

labor, and adequate compensation. To surround the employees of his organization with these conditions, programs of group insurance, home ownership, savings, investment, pensions, and unemployment insurance have all been advanced under company auspices. There is no alternative for the employee but to participate in these programs if he desires the modicum of economic success which present-day industrial relationships permit him. Industrial organizations which advance these plans for caring for the employee during periods of sickness, unemployment, and old age are to be commended, but participation in these group arrangements certainly affects the character and attitude of the employed. Is it not to be expected that initiative will disappear, that self-reliance will have no cause for expression, and that enthusiasm in work will be supplanted by joyless labor?

Man has sought the opportunity to pioneer, to initiate, and to secure from his labors the satisfaction of accomplishment. The core work which a man does, namely, that work which involves earning, seems in many instances to have lost much of its zest. It appears, also, that in solving his home-making problems, mankind is likewise becoming an automaton. There seems to be no other direction in which to turn. Is there not to be found in the conditions new problems for education?

In planning the vocational-guidance program, due consideration should be given to these "extra-employment" phases of life, to those phases of family establishment and advancement in which achievement in the past has been some real measure of a man's success. If initiative in financing the problems of the home is surrendered to economic compulsion, initiative in the arts, in recreation, and in other higher forms of human activity may well be encouraged. The eagerness of mankind to advance, his zeals and ambitions, may well be capitalized on superior levels of human participation.

It may be a false assumption, but the ubiquitous machine has seemed to routinize and "robotize" to the point where only an educational advance of greatest magnitude can restore many of life's values or create even greater values. Enrichment of curriculum has been much discussed, but enrichment must far exceed what is usually proposed if man is to be given his rightful place in the new social milieu. Enrichment must begin earlier and expand further than most of its proponents have yet suggested.

Each reader will bear witness to the remarkable change which has taken place in his own outlook upon life. It has taken only three or four decades to change a provincial folk into cosmopolitan beings. What was the average travel of a lifetime forty years ago is now accomplished in a day. For most adults, the world has become

small, and interest in a universe expands with man's desire to tap the unknown. The enormous increase in the horse power of electric and gas motors has abetted the change. Actual human energy seems to play a small part in the new services rendered man. Illumination in his home responds to the snap of a switch. The cooking stove operates with a turn of a lever. The heat in the home may come from the whitened energy of a remote waterfall, or may be generated from gas which has toured many hundreds of miles of pipe lines. By voices of the air the world's thoughts and activities are transmitted to rural home or urban apartment.

The outlook of children has also changed. The radio, the sound picture, the automobile, and the airplane have crowded knowledge and appreciations into their early years. The pre-school and out-of-school life of children brings them contacts and opportunities which were totally denied the children of a few decades ago. Breadth of knowledge and maturity of thinking have become assets of the modern youth. The advantage gained through the out-of-school contacts must be more significantly supplemented through what the school itself provides. The school has the opportunity of directing new and more powerful forces of human energy than in the generations which have passed.

The broader implications for vocational guidance of this richer and more comprehensive background will readily be seized upon in counseling boys and girls toward tomorrow's life work. The out-of-school agencies for enrichment will also be substituted in the school for the less significant and less meaningful methods now employed.

The number and nature of life activities in which human beings are engaged will be constantly subject to change. Certain youthful tendencies will, however, remain. As in days gone by, the young man and young woman of today seek the opportunity to achieve. Without doubt, public schools have stimulated or accentuated such desires. Youth yearns to make a distinctive contribution to the progress of the human race. He is not content with the society which denies him a chance. Many of the unemployed youth of today have definite fears concerning what opportunities society will provide. They wish to achieve, to earn, to establish their homes, and to build their families. The answer of society cannot be a denial. Society must create the opportunity to serve on the higher levels to which the machine has forced the energies of man.

It is interesting to note the new occupations which have recently recruited human service. Aviation and the radio, with their auxiliary employment, have drawn many into new fields of human service. The research laboratories of industry, social science, and education

have also attracted many, and will continue to attract more. Where one corporation employs fifteen hundred research workers today, many corporations must do so in the future. The improvement in homes, in the quality of our food, and in the character of our clothing has necessitated new workers in landscaping, in chemistry, in design, and the like. The very definite trend in the vocational field should be toward the creation of new and higher levels of occupation. When man has been denied the opportunity to serve because of machine displacement, his movement should be upward and not downward. Education must here play a significant part.

President Sloan of General Motors recently said:

> One of the greatest problems industry is facing today is to create new things, to develop the pioneering spirit in producing, by invention or adaptation, articles that will make life easier and more comfortable, or that will contribute to economic progress by making us more efficient in our work. . . . Americans are a pioneering race and our manufacturers can capitalize the trait to advantage by making a drive for the creation of new things that will furnish increased employment, add to the pleasures of life and raise the standards of living.[4]

The pioneering of a Lindbergh and a Byrd is highly stimulating to our people. Similar pioneering is being carried on today in many fields of human activity. The public schools must discover these distinctive contributions and carry the story to the classroom with its enthusiasms and its inspirations.

School administration is thus confronted with problems unlike those of any previous period. New areas of human endeavor must be explored. Achievements in new fields must be inspired and youth must be encouraged to maintain the attitude of seeking new truths, higher values, and a more significant life for all. Provincialism in school administration must give way to broad statesmanlike appreciations and activity. It is a far cry from the office school administrator, handling supplies and counting textbooks, to the administrator who leads in the councils of industry, of government, and of finance, and who must advance the interests of public education in harmony with and even in advance of the other interests of society. The school administrator must be widely traveled. He must learn from first-hand contact the significance of the Hoover Dam; he must appreciate the beauty and values of Westchester County's parkways and homes; he must see mill children imprisoned in factories, and explore the slums of our large cities to get a full realization of the things which have been done and those which are yet to be achieved. The school administrator must be at home in the libraries of the

[4] *New York Times*, (March 22, 1931), Sect. 2, p. 3.

world; he must know its art, and stimulate further activity in these fields. The school administrator himself must recognize that there are new and higher levels of responsibility for him if the organization over which he has charge is to play a significant rôle in the broad field of vocational guidance.

Proctor, Cohen, Lee, Kitson, Allen, Edgerton, and others have been assiduously engaged in broadening the areas of vocational guidance. They have been indicating the way that the administrator must travel. General learning without specific guidance into a life work has, in the past, been the tendency of the school. This "shotgun" educational policy must give way to a program synchronized with the growth of the individual and must be based upon his powers to achieve. Past policies with respect to the guidance of youth into proper vocations have not been very fruitful. The educator himself trained in special fields has found this to be true when he has attempted to direct and guide the destinies of his own children. Special knowledge and abilities to interpret the desires and ambitions of human beings are apparently required to assist young men and young women into their future callings. It seems that these characteristics might be expected of any good teacher. This might have been true in the less complex society of some years ago. All of us who were teachers twenty and twenty-five years ago assumed that we had the qualities for making adjustments for students to their life's vocations. In retrospect it has been clear to the writer, at least, that the placement of youth and his adjustment to the social order should not be dependent upon the native instinct of the teacher, irrespective of the attendant good will or sympathetic attitude. Not only teachers, but parents also have a limited outlook upon vocations and vocational possibilities. Altogether too frequently the teacher directs youth into the limited fields of his own experience. Parents tend to direct them into vocations which they themselves as young persons may have wished to enter. A well-organized administrative program of vocational guidance should tend to soften the criticism for our past muddling in directing boys and girls into life activities.

The need for scientific vocational guidance is not localized but spreads throughout the domains of a state and into all of the areas of our country. Vocational guidance can only assume its true significance when the administrators of a state, or a department of a state, organize a program and seriously attempt a solution. Such a state organization should be sending constantly to the youth of our schools information concerning changes in the occupations of man, tendencies in the industrial and commercial order, and the occupational needs of the years to come. It would seem to be wise to have the most

intimate connection thus made between what industry, commerce, and the professions are doing and what the boy and girl may expect to contribute to the work of society. Such state bulletins carrying facts concerning occupational qualifications, financial returns, and promotional opportunities would in part solve the problems in guidance which press more and more upon the educational system.

In addition, every school system must have available the services of those trained to cope with the problems of vocational guidance. The data which are collected concerning boys and girls during their entire school careers will be greatly supplemented and will be used for the significant purpose of relating interests, ambitions, and abilities to opportunities for real human service. Where there is one trained worker in the field of vocational guidance today, any fair interpretation of the needs of this country would place at least one hundred times as many ten years hence. Proper development of this field will bring into public education workers of the broadest type, with keen appreciations of changes occurring in our economic and industrial life and with substantial backgrounds in professional education.

Specialization in vocational guidance will in due time compare favorably with specialization in the teaching processes themselves. Kitson lists today such specialized workers as occupational investigators, teachers of courses in occupation, counselors, placement and follow-up officers, psychologists, social workers, and research workers on special problems. Whoever desires to discover the ramifications in this field needs to try counseling with a mere handful of the thousands of young men and young women who require direction. The administrator must appreciate what these specializations imply if he wishes to bring to public education the advantages which in many places are already accruing to young men's and young women's associations and to private employers in many parts of the country.

In our school systems, the individual has become the focus of our problems. Counseling for the individual is successful as the individual reveals his interests and indicates his abilities and capacities. The function of the school in making available to individuals the wide range of occupations in any one particular field is truly an enormous one, and yet if guidance is to be as broad and significant as human endeavor, the great sweep of human activities must be unrolled before boys and girls. The careful selection of class materials, the assembly of meaningful charts and statistics, the field trips to industry, museum, and laboratory are means of enriching children's experiences which must be supplemented by all the newer media science has evolved.

In planning plant facilities, greater consideration must be given the provisions for vocational guidance. The large consulting offices,

with ample files and clerical service, to be found in the junior high schools of Providence, Rhode Island, are an indication of desirable trends. If the guidance of children is to have significance, it must be the responsibility of those who are not only well trained but well housed and conveniently located to the children during all of the school day. It is hardly conceivable that an advanced program of vocational guidance will be carried on successfully in those communities where library facilities, museum facilities, and contacts with other knowledge-spreading facilities are meager or almost entirely lacking. The library has within recent years come apparently into its own. That there should be a thoroughly equipped library of spacious dimensions in every elementary-school building, as well as in junior and senior high schools, is highly necessary if children are to secure appreciations of the work of the world. A few textbooks with a few work books will not bring to children all of the knowledge and understanding which they must have of what the world offers. The multitude of worth-while books and magazines covering all phases of man's work which come constantly from the press should be made readily available to boys and girls. It will aid at some future day to discover to what degree trade journals and specialized types of magazines have influenced the selection of vocations. To many young men and women today are completely closed the covers of those magazines which vibrate with the stories and advertisements of throbbing industry.

Bringing the world in its realities to the classroom through the radio, the sound picture, and television is an exceedingly important aspect of guidance. As man searches for greater things to do his energies will be directed toward the rehabilitation of what nature over the centuries has destroyed. Making deserts fertile, bridging wide waters, and reforesting barren mountain sides are activities toward which young men and women must be encouraged. Broad knowledge of the world is essential for their success. The administrator must assume the responsibility for the elimination of barriers of time and space and for the orientation of his students with worthy concepts and appreciations of the world's needs.

The little red schoolhouse, with its limitations of subject-matter and its narrow outlook upon life, has been gradually displaced within recent years by larger and better schools. Our society, however, will not be content with the character of these schoolhouses nor with the limited possibilities of education which they now provide. There must be no confines to the classroom. The libraries, the auditoriums, the sound-picture studios, the radio centers, and the workshops in the fine arts must be fully equipped to enlarge the vision of the worker of tomorrow. The purely institutional type of schoolroom

will disappear. The school itself, with its many classrooms and laboratories, should breathe the atmosphere of guidance through the facilities which are provided and the opportunities which abound. Vocational guidance is placing upon the school system a new demand for a more comprehensive and more significant analysis of boys and girls, for workers who are thoroughly trained in the world's work and highly conscious of the world's need, and for educational plant and equipment which will bring the world to every schoolhouse.

Problems in Taxation

By H. H. DAVIS[5]

Various definitions of taxation have been developed, but our general understanding of taxes includes those payments which we make to the government or some of its branches for which we get no immediate return. This is rather a wider interpretation than economists usually give, for it includes the gasoline tax, which is paid for a specific service and is based essentially on benefit received rather than on ability to pay. Those taxes which are levied for revenue purposes are levied at one or more of three points, on income, on expenditures, or on property. That is, we may levy tax on what people get, on what they spend, or on what they save. Previously taxes have been almost exclusively levied on savings, and our present problem is to secure revenue from one or both of the other sources. Taxes in Ohio have grown from about $45,000,000 in 1900 to something like $300,000,000 in 1930. It appears a rather startling figure until we compare it with the growth in our state of taxable wealth, which has had a greater relative growth: from less than $2,000,000,000 in 1900 to more than $13,500,000,000 in 1930.

Ability to pay tax depends upon income rather than property, as many people have found to their sorrow in the last few years. Therefore, it is interesting to note the relationship of income to taxation in this state. I do not have the figures for 1900, but the reports for later periods as developed by the government's taxation committee indicate that in 1920 about 5 per cent of our total revenue was spent for state and local taxation, and in 1929 about 7 per cent. Again I would call your attention to the fact that the growth even in percentage is not necessarily startling. Through taxation we buy certain services collectively rather than buy them individually. If 7 per cent of the things Ohio citizens need are furnished by the

[5] Ohio State Department of Education.

government, there seems no reason why 7 per cent of the income should not be spent for taxes. If it should so happen that 20 per cent of our wants are supplied through governmental agencies, then 20 per cent of our income might reasonably be spent for taxes. The true measure of proper tax expenditure is found in answers to two questions. Do we buy the right services through government, and do we pay a fair price? If both of these questions can be answered in the affirmative, then we need not be greatly concerned with the proportion of our income going to taxes.

It seems to me that education contributes financially to society in two ways. It increases the income of society, and it protects the property of society. Therefore, it seems entirely fair that society should pay for its education through taxes on property and through taxes on income. At the present time property bears entirely too large a part of the burden. At an earlier period of our history, incomes were largely derived from property, so it did not make much difference which was taxed. Now, however, a great many of our citizens have rather large incomes from salaries and wages entirely apart from property, resulting from an investment in themselves which cannot be taxed as property. Hence, it appears that incomes should probably bear part of the burden now borne by property.

Perhaps the major immediate problem of taxation in this state is that of reaching intangible property. This, of course, grows out of our classification amendment to the state constitution. It is interesting to note, and here again I draw my facts from the excellent reports of the governor's taxation committee, that the real wealth of the state amounts to something like $20,000,000,000, of which $1,000,000,000 is definitely exempt from taxation, so that we get something like 60 or 70 per cent on our books. The tangibles are estimated at approximately $17,000,000,000, of which less than $1,000,000,000 is taxed, or only about 6 per cent.

The present legislature will, no doubt, devise laws to bring a larger percentage of this property on the books, at a probably much lower rate than now exists. It is interesting to note that the amount of our intangibles nearly equals the tangibles, and, since we are informed that ours is neither a creditor nor a debtor state, it would appear that practically everything we have is mortgaged. This is not entirely true, however, because intangibles, at least those composed of common stocks, often have a value much beyond that of the real property owned. Another offset to the situation lies in the fact that the intangibles of holding companies may have been counted more than once in compiling the $17,000,000,000 total. A bank for example may own mortgages and issue stock, part of the value of

which is represented by the mortgages. Utility companies often issue securities against other securities. We may take some comfort therefore as to our mortgaged condition but must remember that the value of intangibles cannot in the long run be based on anything other than the value of the real property against which they are issued. Our major taxation problem is not that of securing more revenue, but that of shifting the cost from sources now being used to new and hitherto untouched sources of revenue.

The Development of Personality

By MANDEL SHERMAN[1]

SINCE EVERYONE IS NATURALLY INTERESTED in personality development, we have a rather heterogeneous group of people theorizing on this problem. This has been fortunate in some respects, for it has resulted in many useful observations. In other respects it has been most unfortunate, for a great many theories not based upon adequate experimental work have resulted from this widespread interest. We are still in the opinion stage in the study of personality. It seems that some people still believe that philosophizing about personality is as good as an experiment which attempts to get at facts.

The problem is complicated by the confusing terms in which we speak of personality. One person may speak of it as something which is inborn, another associates it with the emotions, still others believe that it develops simultaneously with intelligence. Thus we find that no two persons speak of the same thing when discussing personality development. In general, a sort of mysticism is in the air when the topic is broached. Often the clinician who delves into problems of personality surrounds himself with a terminology which causes further confusion. This is perhaps due to the fact that the less known about a topic the greater the tendency to surround it with a mystical and complicated terminology.

The history of scientific work on the problem of personality is similar to that of other fields of investigation. Earlier investigators believed that personality might be judged by the appearance of a person. The early criminologists believed that the shape of the head and the facial appearance determined the personality. But this idea was soon replaced by the theory that personality goes hand in hand with the physical make-up of a person. In the past ten years this theory has been revived by a group of German investigators who believe that personality is determined at birth, that personality traits are inborn.

In our quest for a method of approaching the study of personality in a straightforward manner we have deliberately impeded our own progress. We have put out strange and unscientific studies. In our

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groping for an explanation we have grasped at anything that came our way. Physical make-up, constitutional development, inheritance, and glands have all been tried, and all probably must be discarded. Think of the books that are written on glands and personality. Our pituitary gland, located in the skull, is supposed to make us affectionate; the proper functioning of the thymus and thyroid to make us paternal or maternal; and perhaps other glands make us introverted or extroverted. True, there is evidence that the abnormal functioning of some of the glands does alter our personality, but those are abnormal conditions. When the thyroid secretes more than it should the person is likely to become excitable, irritable, and quick in his actions, but this is no proof that in the person with normal thyroid secretion this gland determines personality. When we speak of the direct effect of glands upon the alteration of personality, we are speaking of abnormalities; and when we analyze the situation further we see that there is only a physical relationship between glandular and personality abnormalities. When the thyroid secretes more than the normal amount, the activity of the body increases. The body is keyed up to a high pitch of reactivity. Thus a person who has a glandular abnormality is likely to react to many conditions to which he would not react ordinarily, because of the greater excitability of his nervous system.

Personality develops genetically; that is, the traits which we classify into the general category of personality develop through training and experience. The newborn infant has no personality in the sense that he has a method of adjusting to his environment in other than trial-and-error physical activity. He does have rudiments of reflexes and muscular and nervous activities developed to a point of some efficiency. He begins immediately to adjust himself to his surroundings. He uses the trial-and-error method and as his successes begin to satisfy his needs his personality traits begin to shape themselves. At one time we believed that the infant had the same characteristics as the adult except in point of maturity, but experimental work in the last dozen years has disproved this theory. Experimental work at Ohio State University indicates that what we have firmly believed to be inherent in the make-up of an infant develops, rather, by growth and experience.

Personality, therefore, is not static and inherent but develops by necessity as the environment of the child broadens and his adaptation problems increase. Change in personality is an ever growing process with modification of old traits and the development of new ones into a complex organization which is difficult to understand once the

constellation is definitely formed. The personality of the adult is difficult to fathom because of the subtle organization of various traits. Characteristics, at first very simple, have been consciously and unconsciously fashioned into an intricate system.

The evidence that personality traits change with experience and with changes in environment has accumulated rapidly as a result of experimental work. In a recent study at the Washington Child Research Center two groups of children were observed for a period of six months. One group attended the nursery school, while the children of the other group were chosen at random from homes which had no contact with the Center. The children were examined regularly during six months for their personality traits. A large number of personality characteristics were studied, such as interest in new objects, ability to get along with strangers, and the like. Numerical scores were assigned to provide a basis for accurate comparison of the two groups of children. Upon entrance to the nursery school the children of this group did not differ from the group of children selected from the homes; they had a large number of detrimental traits which, as mentioned before, were quickly discarded by them. Many of the children were sulky, unsocial, unco-operative, and so individualistic that they could not get along either with other children or with adults. Two outstanding differences were found. The children who had systematic training in the nursery school showed a consistently greater increase of useful personality traits than the children without nursery-school training. The nursery-school children also developed at a faster rate the ability to get along with others and discarded quickly those traits which are universally considered detrimental.

Traits like initiative and independence, often considered inherent in the child, develop because of environmental conditions. Adjustment to the situations in which the nursery-school children were placed demanded of them independence and initiative. As a result these traits developed quickly. On the other hand, traits which are sometimes considered socially offensive also developed in nursery-school children. Egocentricity, or the attempt to dominate associates, developed in the children who had to adapt themselves to a large number of other children. A great deal of conflict resulted because each new child entering the nursery school attempted to dominate the others. But very soon a happy medium resulted; the children learned to respond to situations dominantly but without infringing upon the rights of others.

Such studies show that new personality traits develop quickly when conditions demand a change. The experiment also shows that

traits can be called useful or detrimental only as they help or hamper the child's social adjustment. Since the newborn infant has no personality traits, and since there is no evidence at hand to show that personality matures in its own right, we must conclude that personality is determined by the way a person adapts himself in his everyday life. This shows again that we cannot speak of inherent defects or abnormalities of personality, especially in view of the fashioning of personality by social conditions. The best method, therefore, of defining the conditions which determine personality traits is by a study of environmental influences.

Environmental conditions are often difficult to analyze. In a complex civilization many influences are below the surface; that is, they cannot be observed by one who is not well trained in psychology and sociology. For this reason an environment may appear to play a similar rôle in the lives of two people, but may be found to be quite different when the situation is analyzed closely. We are apt to believe that when two children live in the same home the environmental influence has been the same for both. But this is not the case, especially when there is a great difference in the ages of the children.

Studies of differences in the environmental conditions of brothers and sisters only four or five years apart show that there are many subtle factors not easily observed. For example, the parents usually behave differently toward each child, and their attitudes change with time. The younger child is likely to have a very different parental environment than the older. As time passes the economic conditions of the parents change, their interests become broader, and the methods they use in training their children differ. It has been found that even slight differences in the attitudes of parents may exert a profound influence in shaping the personality of the children.

The complexity of modern civilization makes it difficult to study the development of personality. It is quite impossible to make laboratory studies of children in such a way as to know all the influencing conditions. The best approach thus far made is by studying children whose environment changes but little. But except for isolated rural and mountain communities it is difficult to find groups of children who are uninfluenced by conditions outside of their immediate environment.

A study of 183 children has just been completed which may throw light upon the way in which personality develops and upon the conditions influencing such development. These children live in four different communities in hollows, or pockets, in the Blue Ridge Mountains. They have varying degrees of contact with the culture of the outside world, from almost none in one community to regular

schooling and trips to other towns in another. The economic and cultural organizations of these communities also vary in degree from an individualistic way of living, that is, each home having little to do with other homes, to a fairly well-organized community life.

Community A, the lowest in the scale, has no organized activities, has had only sixteen months of school in the past forty years, has no local government, and no leadership. Community B is somewhat more advanced, with the most prosperous man the occasional leader, and with approximately three months of school during each year. Community C, still more advanced, has school fairly regularly, usually five months during the year, and the children are in contact with each other frequently. Group activities are not as yet in evidence; the children generally play by themselves or with only one or two others. In Community D the school has been regular for the past six years, and with the aid of the teachers the children have learned to adapt themselves to each other.

In none of these communities, with the exception of a few children in Community D, was a child found to have an abnormality of personality in the sense of inability to adjust himself. The conditions in Community A are simple or even primitive, and the children have little difficulty in adapting themselves. Their life requires but little change from day to day, little information is needed, and there is almost no problem of having to adjust to other people. Even within a household one child has little to do with the other. Compared with children living in a more complex, urban community these children have much more stable personalities because their environment changes but little from day to day. Growth in years does not imply, in this community, a change in social conditions, whereas with the ordinary child, new problems arise daily.

In Community B the personalities of the children are more flexible; that is, their methods of adjustment are likely to change occasionally. The existence of a school necessitates adjustment in a situation other than the home. The children of Community A are not required to adapt their personalities to the requirements of social contacts, whereas these children are necessarily required to learn to adjust themselves to other children.

In Communities C and D the children make contacts not only in school, but also occasionally with the outside world. The socialization process has gone forward and the children must therefore be able to adapt themselves to many conditions and to many people. As a result, their personalities are more flexible and they have more complex character traits than the children of the other two communities whose lives have been passed in a simpler social organization.

Thus we see that as the environment of a child broadens his personality grows; that is, his characteristics multiply and his method of adapting himself becomes flexible. But coincident with the growth of traits is the development of many inhibitions and subtle modifications. The mountain children of Community A cannot learn new reactions quickly. For example, when a school was opened after a lapse of many years, the teacher had difficulty in making them understand that they must sit quietly in the schoolroom and that they must act in a co-operative way. They had been used to individualism, and their personalities were not suited to group activity. In Community D the children have learned to modify some of their characteristics in order to adapt themselves to group conditions. The children have multiple personalities in the sense that they have utilized different traits for adaptation to different conditions with which they have been confronted.

From the study of these mountain children who live under conditions of varying complexity, we may conclude that personality growth and what is often called the "fullness" of personality result from rich and variable experience. The child who is sheltered physically and mentally often develops either a weak personality or traits which center in himself and which cause difficulty later on when he is forced to make adaptations to others. We also have evidence that personality does not mature, that there is no inner force which brings out personality as the child grows older. It has no relationship to chronological age except as increasing age means greater experience and more practice in adaptation. Personality is fashioned and molded only by the experiences and responses of the growing individual. This may explain why many children develop personality traits detrimental to their adjustment as the result of so-called "good" training within the narrow confines of the home. And it may also be the explanation for the generally greater force of personality in the boy who is brought up "on the sidewalk" than in the one who is brought up in the drawing-room.

Growth implies the continual development and solution of conflicts, and in this process changes and modifications of personality occur. For our purpose we can define a conflict in the generally accepted meaning of an emotional reaction resulting from a discrepancy between the desires and the actual or imagined attainments of an individual. Conflicts are therefore more likely to develop in children who have a broad environment and many experiences than in children whose environment is limited. In the attempt to solve his conflicts the growing child necessarily develops personality traits,

useful or detrimental, depending on the environment and the attitudes of those about him. His conflicts determine his repressions and inhibitions and, in many cases his initiative and ambition.

Without conflict personalities would be colorless. The mountain environment which demands very little ingenuity and energy shapes children whose personalities are colorless and whose traits are inadequate when they are required to adapt themselves to a new situation. When a child is closely guarded in the home and develops the attitude that he is the center of the universe, his difficulties are great when he is forced to adapt himself to others who may have different ideas about his importance. The longer he has been thus protected the more difficult it is for him to make a satisfactory adjustment. If his egocentric traits are well established, he is forced either to retire within himself, or to develop his egocentricity to a greater extent.

On the other hand, the child who is dominated in the home and who is not allowed to express himself fully is likely to be emotionally inadequate later on. His early environment is likely to develop personality characteristics of shyness and withdrawal. He will develop fears and will never express himself fully unless he develops serious conflicts and goes to the other extreme. It has been said that the insipid personality of a large number of people is due to their domination during childhood by their parents. One may venture the opinion that the new "force of youth" is due to the decreasing influence of parents and to the increasing importance of other social influences.

The Analysis of Behavior Problems

By HARRY J. BAKER[2]

IT IS THE PURPOSE OF THIS PAPER to present one of the newer techniques for the diagnosis and analysis of behavior problems. The alarming persistence of problem behavior and delinquency which continuously affects schools, courts, and society at large, raises a challenge which our educational and research facilities must try to meet.

There are three major phases of behavior which challenge our attention: the analysis and diagnosis of present behavior problems; the proper therapeutic treatment of these cases after analysis; and the early analysis and prevention of cases before active behavior patterns actually develop. The present report is concerned chiefly with the first of these phases, although a few comments on the other two will first be in order.

The second phase of behavior just mentioned has to do with the

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proper therapeutic program for cases of active behavior or delinquency. Within the past few years in which a more scientific attitude has been adopted, the treatment of a limited number of cases by clinics and private agencies has been a most encouraging sign. Substantial progress has been made in this field through intensive work and wherever liberal time has been allowed for adequate and comprehensive analysis. Such agencies as the Institute for Juvenile Research at Columbus, the Institute for Child Guidance in New York City, and the Judge Baker Foundation of Boston under the direction of Dr. William Healy are notable examples of what can be done under favorable conditions. All of these agencies are well aware that the preventive program is the ideal point of attack rather than instituting remedial measures after the cases have become acute.

Prevention is the ultimate goal of all behavior programs. Little real progress, however, can be made on it until the first two phases, analysis and treatment, have been developed so as to trace behavior trends to their sources. From these basic sources progress in the prevention of other cases may be established. The actual program of prevention has many inherent difficulties. The parents of the most serious behavior cases are the least likely to attend any neighborhood meetings or discussions on preventive measures. "Carrying coals to Newcastle" is too true of general programs in this field. A second difficulty is the unfortunate psychological effect of raising doubts in the minds of parents whose children have shown no marked behavior discrepancies. In general, there is a direct relationship between the amount of concern which parents show and the gravity of the immediate behavior status, whereas an earlier parental concern is desirable. A third difficulty is that in the minds of the parents each child is a distinct and unique problem, not possibly understood better by any clinic or agency on comparatively short notice than by the years of intimate contact of their own sort. If the program of prevention is to be effective, the analysis of causes must be traced to their most minor, trivial, and seemingly inconsequential causes, and definite evidence must be presented to parents that these symptoms are even more dangerous than the legal delinquencies, such as stealing or truancy, which attract the attention of police and the courts. Hence, in order that such a program may be made effective, attention must be focused on better and more specific analyses. We therefore return to this phase of the problem.

As in many other fields of endeavor the analysis of behavior is a relative matter, ranging from an incidental study of trivial incidents by parents to a complete and comprehensive analysis of a seriously involved problem by a scientifically trained clinical staff. Analysis

on a comprehensive scale is highly desirable, but may also be as superfluous as to require a complete physical examination before setting a broken finger or removing an obstacle from one's eye. However, the physical analogy is not exactly parallel, since a behavior problem may have its sources in many phases of the individual's life and experience.

In the main, the present systems of diagnosis involve the descriptive or subjective method of analysis. The usual method of procedure is to write a detailed developmental history with special attention to the subject's chief points of difficulty. Other investigators have introduced an objective method of scoring, supplemented by the subjective method just mentioned. The ten-point scale for psychopathy developed by Dr. Henry Goddard while at the Ohio Clinic for Juvenile Research is an illustration of this type of diagnosis. The Mathews Questionnaire, and Kent-Rosanoff Association Test, the Rogers' Scale of Personality Adjustment, The Haggerty-Olsen-Wickman Behavior Rating Schedules, and the tests devised by Baker entitled "Telling What I Do" are illustrations of specific devices, either self-administered or given by the staff worker to gain more complete information on traits and attitudes. Yepsen has recently proposed a measurement of behavior consisting of fourteen points, with a five-point scale for recording the gravity of each item.

Before the announcement of Yepsen's scale the present writer's preliminary attempt at a similar kind of analysis was undertaken. This scale of 66 items has a five-point plan of scoring each item. These items were selected from a wide field of factors, any one of which may contribute to behavior maladjustment. They are arranged approximately in a sequence which serves as a logical introduction to a pupil's problem, dealing with such topics as the child's health, his general habits, his abilities, and interests. The latter part of the diagnosis deals with the family background, including the general status, the attitudes, and the home atmosphere.

The items of this scale, as well as those of other scales, have been selected so as to deal with fundamental causes rather than with derived effects. For example, it would be undesirable to include an item such as stealing in a scale of this kind, although such an item could well be devised with appropriate steps of the seriousness of this delinquency. On the other hand, an item such as the discipline of the child at home, which might be a cause of stealing, quite legitimately has a place in a scale of this kind. The selection of the items was purely arbitrary, but the list was designed to cover the chief points in an analysis of causes of behavior maladjustment. This

number might easily be reduced to not more than ten or twelve items, but the items would have to be stated in a much more general way. At the other extreme, one could easily extend this number of items to two or three hundred and delve into the problem in great detail. The scale as proposed is a compromise between these extremes.

Each of the items is scored on a five-point scale with the steps as follows: very poor, or a score value of one point; poor, two points; fair, three points; good, four points; excellent, five points. Each of the five steps for all the items carries a descriptive report of the degree of difficulty, rather than merely a statement that the item is excellent, or poor, or fair, as the case may be. For example, in the early self-care of a child, the very poor item is described as, "Not expected to help and would not try." The poor item, evaluated at two points, reads, "With much coaxing would sometimes try." The fair item, scored three points, is, "Needed frequent urging and spends too much time." The good item is, "Tries most of the time, seldom refuses," with a value of four points. And finally, the excellent, with a five-point value, is, "Able to dress and care for self and willing to try." Many questions might immediately be raised as to the reasons for scaling items in this manner. The chief criterion in making such a scale is the effect which that particular item has upon the possible malbehavior of a child on account of his early self-care. It would be generally conceded that if a child were able to dress himself and were willing to try at the usual age at which this behavior is expected of him this accomplishment on the child's part would not have any unfavorable or emotional reactions which would tend to make him maladjusted in other respects. On the other hand, if a child had not been expected to assist himself, or if he were in a high state of resistance when forced to do so, the emotional effects would probably be quite serious in themselves and would probably carry over into other phases of his development as well.

The arrangement of the steps in the scale is, as yet, in a somewhat arbitrary stage, except that it represents the pooled judgment of the staff workers of the Detroit Psychological Clinic as well as that of the author. The assignment of score values avoids the necessity of trying to determine an absolute zero point on these scales. Such refinements may eventually be arranged, but for the present the author is reluctant to call any item as poor as zero on the scale of seriousness of sequence. Since there may be a minimum score of one on each of the items, or a possible maximum score of five, the range of scores on this particular scale is from 66 to 330 points.

In its present form the behavior analysis blank is a four-page folder with three columns: the first column presents each of the

items; the second part contains an appropriate place for the scoring on the five-point scale; the third part has space for a limited description of the item. There is in preparation a series of key questions or critical questions, one or two for each item, which is designed to bring out the chief facts with regard to it. There is also in preparation a set of detailed questions, ranging from ten to twenty-five in number, for all of these items, which are designed to bring out full

TABLE I

DISTRIBUTION OF SCORES OF 67 BEHAVIOR AND NON-BEHAVIOR CASES

Score	Behavior	Non-Behavior	Score	Behavior	Non-Behavior
(1)	(2)	(3)	(1)	(2)	(3)
320–324		2	220–224	7	
315–319		3	215–219	5	
310–314		4	210–214	3	
305–309		4	205–209	4	
300–304		6	200–204	6	
295–299		5	195–199	2	
290–294		4	190–194	4	
285–289	1	7	185–189	2	
280–284		9	180–184	4	
275–279		9	175–179		
270–274	1	6	170–174		
265–269		3	165–169	1	
260–264		1	160–164	2	
255–259	1	1	155–159	2	
250–254	1	2	150–154		
245–249	1	1	145–149		
240–244	4		140–144		
235–239	5		135–139		
230–234	5		130–134	1	
225–229	5		Total	67	67
			Median	217	285

details on the few factors which seem to be unusually significant in each individual case. For example, if the general questions disclosed that six items out of the total number seem to be unusually significant in the child's behavior, the detailed check would be given on these particular items only. The first and primary purpose of this scale is to discover the exact items which may cause behavior maladjustment.

Although the scale is designed chiefly to be of diagnostic significance, it is also capable of yielding a single objective score ranging from 66 to 330 points as just mentioned. The possibilities of definite and specific numerical scores for behavior problems have not as yet been fully explored, but they already offer some possibilities which

will tend to take this phase of child study out of the realm of purely subjective opinion and which may eventually place it upon as definite a plane as is the measurement of intelligence by mental tests.

Within the past two years teachers in service in the Detroit public schools, under the direction of the writer, have prepared detailed case studies as a project in extension classes of the Detroit Teachers College. Each student made a detailed study of an extremely serious behavior case and paralleled it with a control, or non-behavior, case. A total of 67 pairs of cases have been rated in full on these scales. The distribution of the results is shown in Table I. The range of scores for the behavior group was from 130 to 289, with a median score of 217 points. The range for the control group was from 245 to 324 points, with a median score of 285. The difference between the median scores of 68 points is

TABLE II

COMPARATIVE SCORES ON "BEHAVIOR ANALYSIS" AND "TELLING WHAT I DO" TESTS

Group	Cases	Median "Behavior Analysis" Score	Median "Telling What I Do" Scores
(1)	(2)	(3)	(4)
Behavior ...	35	219	194[a]
Non-behavior	31	284	216[a]
Behavior ...	15	206	197[b]
Non-behavior	13	287	212[b]

[a] The primary form of the test was used.
[b] Advanced form of the test was used.

more than 18 times the probable error of the standard deviations of these distributions and indicates a highly significant statistical difference between the two groups. It is quite obvious from these distributions that a score of approximately 240 points or less is a matter for serious concern on the part of teachers and parents who are interested in the welfare of children.

The chief criterion of the validation of these results has been the general record which these behavior and non-behavior cases were known to have disclosed in their school and home adjustments. A further validation was secured on some of these cases by the administration of the "Telling What I Do" Test. The results of these self-administering tests are shown in Table II. In the primary form of the "Telling What I Do" Test there is a difference of 22 points in median score between the behavior and non-behavior groups and of 15 points in the advanced form. It is evident from these

results that the children's self-estimates of their behavior roughly parallels the opinion of teachers and others as to their behavior status. The "Telling What I Do" tests each have 80 items. The primary form is designed for Grades IV to VI; the advanced form for Grades VII to IX or higher. The 80 items of each test deal with such problems as school, home, play, general behavior, and ideas of right and wrong. Each item has an ideal answer, a somewhat neutral answer, and a definitely undesirable one which may be checked by the pupil. These "Telling What I Do" scales require little time on the part of the clinic worker, and if used in connection with the interview, may furnish some very important supplementary information for the history of behavior scales.

From the results of the 67 pairs of behavior and non-behavior cases, a definite score was derived for each of the 66 items, and it was possible to discover which items differentiated cases better than others. These items have been arbitrarily divided into the most significant third, the second significant third, and the least significant third. The listing of these items according to tertiles is:

Most Significant

13. nervousness
18. home duties
20. eating habits
24. early recreational facilities
25. later recreational facilities
26. playmates or companions
27. social type
28. personality type
29. anger, rage, revenge, etc.
31. excitement, shock, uneasiness, etc.
32. pity, sympathy, enthusiasm, etc.
35. initiative and ambition
36. vocational interests
37. general behavior
56. general home atmosphere
57. ideals
60. parents' social adjustment
61. discipline of child
62. attitude toward child
63. child's attitude toward home
65. scholarship
66. child's attitude toward school

Average Significance

11. motor control and coordination
14. personal hygiene and clothing
15. looks or appearance
16. early self-care
17. present self-care
19. conditions of eating
21. time for sleep
22. conditions of sleep
23. dreams
30. fear, dread, anxiety, etc.
33. intelligence
34. interests or hobbies
38. parent's intelligence, father
39. parent's intelligence, mother
42. age of parents at birth of child, father
46. personality, father
47. personality, mother
48. occupation
49. economic status
58. religion
59. recreation
64. attendance

Least Significant

1. health present
2. health early
3. children's diseases
4. serious infectious diseases
5. accidents
6. degree of major accident or illness
7. vision
8. hearing conversational voice
9. crippled
10. size for age
12. convulsions and seizures
40. education, father
41. education, mother
43. age of parents at birth of child, mother
44. health, father
45. health, mother
50. home language
51. other adults in home
52. number of siblings
53. position in siblings
54. legal status
55. broken home

All of these 66 items, except the numbers dealing with children's diseases and the item on crippled conditions, actually differentiate between the behavior and the non-behavior groups. These two items yielded slightly negative scores which are probably due to chance, since these children were unselected with respect to either crippled conditions or the diseases of childhood. On the basis of these results, however, it should not be concluded that crippled conditions or the number of children's diseases do not have specific effects upon behavior; in fact, cases may be selected particularly with these characteristics, and some definite behavior problems could be brought to light.

A detailed discussion of typical behavior or non-behavior cases cannot be presented at this time. The average behavior case is characterized as very poor in 6.41 of the 66 items, and as poor in 11.27 of the 66 items. On the other hand, only .87 of an item is rated very poor on the control group, and 2.23 as poor. In the practical analysis of cases the diagnosis is naturally focused upon these specific items which are listed as "poor" or "very poor," and means for their correction or improvement are the ultimate goal.

Some of the major problems in the analysis of behavior disorders have been presented. The plan proposed and described is designed to be of diagnostic importance; it also has the advantage of offering objective scores which assist in making the problem more specific than would otherwise be possible. This behavior scale is, as yet, in a tentative form, but it has proved its practical usefulness in clinical diagnosis. Further research is to be carried on in the refinement of the items for the scale. The ultimate purpose of such study is to analyze problem behavior in its earliest forms and to bring about prevention before serious consequences develop.

The Prospective Commercial Worker

By W. C. WEIDLER[1]

EDUCATORS AGREE THAT THE VOCATIONAL SCHOOLS have dual responsibilities. Emphasis is given to the fact that we must prepare students not only for effective business functioning but also assist them in meeting other responsibilities of a political and social nature. It is frequently implied, if not so stated, that one set of courses will meet the need for vocational training, and that other courses, usually termed liberal or cultural, prepare for family and political relationships. It seems unlikely that courses of study lend themselves to any such clear-cut classification. One may differentiate in the matter of objectives, only to find that course elements which may be created without vocational thought or intent have fundamental vocational significance, and that other content, presumably of a vocational nature, is shot through with social and political significance. A few examples will suffice to make this fact clear.

In order to assist students in meeting future political responsibilities, courses in political science and history may be required. From these, students should gain the concept of a dynamic, constantly changing economic and social order and some appreciation of fundamental trends economic and social. Such study contributes to the understanding of the setting in which business institutions must operate. This is most effective vocational training, particularly if we look beyond the apprenticeship period and visualize our graduates in positions of responsibility. Courses in literature, designed, primarily, to enrich the leisure of the individual, may so add to his facility in the use of language as to have most important vocational significance. In the same way, courses in commercial geography and industrial history, vocational in intent, may have the widest cultural value. The individual trained in accounting and business finance is thereby rendered somewhat more intelligent in his attitude toward problems of public finance and the regulation of public utilities.

If the foregoing analysis be accepted, we must conclude that vocational training to be really effective must be broad in scope rather than limited to clerical techniques and processes. We must grant that

[1] Ohio State University.

our courses in accounting, business organization, and finance should be amply supported by courses which will give the student an appreciation of the setting in which business institutions are operating. If we create the most effective vocational training, I suspect that we shall find that we have evolved a program of such liberality and scope as will constitute effective citizenship training.

In connection with that part of the work which relates more directly to business techniques, attention has probably been concentrated too closely upon the duties which our graduates assume in their first positions out of school, and too little thought has been given to the responsibilities which they must assume as they are advanced to positions of large authority. It seems logical to expect more effective performance even on first jobs if an effort is made to clarify essential relationships and to give that constructive significance to subjects which their importance merits.

In developing commercial curriculums we have probably thought too much in terms of courses and course contents and too little in terms of basic proficiencies and personal qualities. It is obvious to even the most casual observer that success or failure in business depends to a surprising extent upon the possession of desirable personal qualities and fundamental proficiencies.

In a paper delivered recently before a meeting of the American Association of Collegiate Schools of Business, Dean Heilman, of the College of Commerce of Northwestern University, named the following personality factors as contributing to business success: judgment, delight in performance, ingenuity and resourcefulness, self-confidence in competing with others, adaptability, a sense of responsibility, and an ethical sense. In view of their importance, it is clear that vocational schools should make every effort to develop these desirable personal qualities.

Modern Commercial Education

By CHARLES W. HAMILTON[2]

PUBLIC COMMERCIAL EDUCATION INCLUDES not only senior and junior high-school work, but also vocational, evening, and continuation schools. This discussion is confined, however, to the program from the eighth to the twelfth grades in the junior and senior high schools, and will be concerned with the broad objectives which have been, or should be, set up for young men and women

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who are preparing to enter positions in offices and stores. Methods to be used in arriving at desirable goals will be suggested. Business education seems more adequately to meet the objectives of the six cardinal principles of secondary education than does any other program. This is true since we have the definite objective of preparing for vocational work. We are also doing our share to meet the other objectives, especially in character building. Business educators are much concerned at the present time with the development of character. A recent conference of business executives and leaders in business education held in New York City discussed at great length the necessity for developing desirable character traits. There was, it is true, some uncertainty as to just how to develop initiative, accuracy, punctuality, and right attitudes of service. It was mentioned that knowledge is placed tenth in a list of requirements for office workers set up by the Lord and Taylor Company and that character traits are at the top. Many recent textbooks, as well as leaders in business education, are trying to develop habits of accuracy, courtesy, poise, orderliness, and economy, and to inculcate ideals of thoroughness, loyalty, and high standards of achievement. Commissioner Cooper in his lengthy definition of education includes the statement that "the individual learns . . . to appreciate the mutual 'give and take' character of human association."

Modern methods have departed from the old traditional idea of teaching mere subjects such as bookkeeping, shorthand, and typewriting, and now contemplate a training program which will last throughout the entire school period. For instance, in our system a choice of courses may be made at the end of the seventh year, and the program continues through the twelfth, with opportunities from time to time for a wide selection of subject-matter. "Is not the eighth year too early to make a definite choice?" ask some. Remember that it is not impossible or even difficult to cross over from one course to another, and, of course, it is valuable to have the motivation of a definite objective.

The junior high school should be a try-out period for those who do not know just what vocation they are going to enter, and this group includes practically all children in Grades VII, VIII, and IX. A vocational choice is inevitable at some time and, since we are aware that known objectives mean motivation, how much better it is for a boy or girl to be working with some definite aim in mind, even though this may be changed later for some other objective. This notion does not necessarily mean early entrance into business or industry. We all hope that this entrance may be postponed as long as possible in order that each boy or girl may develop his abilities to

the fullest possible extent. All should secure the best possible special training before seeking employment; they should, furthermore, secure the largest possible background of general education such as in English, science, history, art, music, and practical arts.

"Individuality through guidance" is the keynote of this conference. Especially in the junior high school is it necessary to consider the value of guidance throughout the entire period. Courses entitled Junior Business Training or First Lessons in Business in the eighth or ninth year offer a splendid opportunity to impress these young folk with the fact that there are a great many office and store positions other than those for stenographers, bookkeepers, and typists. This subject may be taken with profit by all pupils, as it is quite as desirable as is manual training for boys or home economics for girls. All boys and girls should know about simple business matters since all must have some contact with business. This subject furnishes a basic course for the further study of business education, provides knowledge and skill which those who leave at the end of this year can use in their first business connection, and fits all boys and girls to be intelligent consumers and users of business service. The growing importance of the First Lessons in Business is indicated by the fact that 726 students are enrolled in it, while 423 students are enrolled in the first-year course in college preparatory algebra in the schools of Elizabeth, New Jersey. In the junior high school are found typewriting and elementary bookkeeping, although typewriting constitutes a fairly definite vocational preparation, it is also offered as a try-out course and is becoming increasingly important for all pupils from the point of view of the consumer.

Mr. Nichols, in *Paths to Success*, says of business education:

> The commercial program should include each year a unit of skill training, a unit of general business training, and two or more units of general academic training, thus building up a sequence of related skills, a clear comprehension of how and why business is organized and conducted, and a fund of general information.

Each year is then a well-balanced unit of preparation which, while articulated with the preceding and succeeding years, represents a sufficient preparation for junior positions if a pupil decides to leave school. Guidance should be continuous throughout the school life of pupils. Those who are qualified in English should be urged to follow secretarial work, those skilled in mathematics should be successful in financial or accounting or business-management positions; others who have creative imaginations should seek a career in advertising, while those with a good personality should be directed into

selling occupations. There can be no doubt that many, literally thousands, should be guided away from the study of shorthand. Young men and women should also keep in mind the difference between initial position objectives and ultimate position goals. Individuality through guidance may be promoted through making pupils conscious of the desirability of thinking and planning ahead.

Modern methods insist upon a close articulation between the various years of the program as the child progresses. This means, of course, in a fairly large system, a scheme of tests and measurements which will enable definite standards to be set up and achieved. Especially is this program desirable where there are junior and senior high schools. If possible, the guidance program should include visits to the junior high school by the principals of the senior high schools even to the extent, perhaps, as in our system, that the ninth-year pupils coming to the senior high school make out their proposed subjects cards under the direction of the principal of the senior high school. The line and staff organization, which includes supervisors of special subjects, also assists materially in a close articulation. Thus supervisors see that a natural progression is made in studying subjects in which there is a continuity of subject-matter.

As pupils are promoted from lower grades of commercial work to higher grades, additional differentiation of courses should be set up. We offer in our school system four distinct commercial diplomas: the secretarial, the accounting, the general business, and the retail selling. All are self-explanatory except, perhaps, the general business, which is a program designed to meet the needs of those who cross over from another course into the commercial course in the upper years. The minimum requirements for this diploma are two years of typewriting, one year of bookkeeping, one year of economic geography, and a half-year each of business law and business economics.

The two regular commercial courses require one year of office practice or secretarial training during the twelfth year. Here an effort is made to equip each pupil with at least one machine skill such as the calculating machine, dictating machine, duplicating machine, bookkeeping or billing machines. We recognize that there are three types of training offered on machines. The first merely introduces pupils to a machine without teaching much about it except why it is used. The next method gives an opportunity to learn how to operate it. The third method includes the second and gives in addition sufficient practice so that an operator may claim a marketable skill. We try to carry out the last method. Office practice, or secretarial training, organizes and consolidates the previous work in shorthand,

record-making, typewriting, and such related subjects and develops additional desirable character traits. It also serves as a final polishing-up process designed to prepare pupils for immediate entrance into the higher types of office positions. Assignments to selected persons, for whom students work for periods varying from two to four weeks, go hand in hand with formal classroom instruction. These assignments may be given after school or, if possible, in the closing periods of the afternoon, plus an hour or two after dismissal. In lieu of such allotted practice, acceptable part-time work in business offices may be accepted as an equivalent of the laboratory work thus defined as an assignment. Here the pupil becomes better acquainted with actual business conditions, becomes more adaptable and flexible in adjusting himself to personalities, and is thereby better able to face the more severe test of actual business.

The retail-selling program depends for its success to a considerable extent upon co-operation with local merchants. This is probably the most typical example of co-operative business education. We do not have the alternate-week plan, but we do insist upon our retail-selling students securing some store practice afternoons and Saturdays. The Chamber of Commerce and local stores co-operate with us in this work. The state grants credit for this store practice up to a maximum of five credits a term, according to the time spent. Of course, some cities, such as Rochester, New York, have tried co-operative education in the secretarial and general office fields. These, however, have not been as successful as the co-operative retail-selling programs. Mr. Nichols, of Harvard, has succeeded in effecting for Boston and vicinity a splendid co-operative organization between business firms and business educators. On this committee business men, office managers, and educators are represented.

We have brought our students to the verge of graduation in high school. It behooves us as educators to halt and ask whether we have prepared the special type of student that the world is demanding. We live in a fluent age. The demands of yesterday are by no means those of today. What are the relative demands for the various types of office workers? Recently at the meeting of the Eastern Commercial Teachers' Association at Boston, Mr. Lovejoy, of the Hood Rubber Company, called attention to the fact that of five hundred office workers in his company only twenty are stenographers. Mr. Nichols in *A New Conception of Office Practice*, published by the Harvard University Press, mentions some twenty-one definite office trades. Again Mr. Lovejoy stressed the fact that billing-machine operators, like many other machine operators, receive more money,

do less work, and find the work less fatiguing than stenography. One office manager stated at this convention that practically all bookkeeping is now done on machines. Another stated that there are only two stenographers in one large firm, and that all the rest of the correspondence was cared for by dictating machines. The Prudential Company, of Newark, is no longer employing shorthand writers, but is using the dictating machine almost exclusively. Obviously, the demands of the business world are changing. For these reasons many commercial educators feel that our program must be expanded to include training in manual dexterity on machines to the extent that one thing may be learned with expertness and that there be a reasonable knowledge of others. Professor Nichols has stated that throughout the country less than 8 per cent of the office workers are stenographers.

More important than all the mechanical skills that can be developed is the problem of the character of the individual. Neither dexterity nor brilliance will amount to much unless accompanied by such steadying virtues as dependability, initiative, resourcefulness, buoyancy of outlook, sound common sense, and an unfailing courtesy. In order that initiative, courtesy, and right attitudes of service may be inculcated, it is necessary to develop a high morale in every class. Young men and women will usually do what is expected of them. Therefore, we should give them an opportunity to exercise leadership and self-control in classes, in clubs, in assembly, in assignments to school offices and part-time positions, and on the service league. They take charge of the sales of tickets, organize their proms, and other school affairs. In one of our senior high schools they have opened a store and are selling caps, emblems, notebooks, and the like in order that they may raise money for the Commercial Honor Club. They organize coaching classes during study periods and after school. In the classroom itself the greatest change is noted. The old-fashioned fear-and-punishment method has given way to the love-and-leadership method of conducting a class. In modern commercial classes boys and girls do whisper, turn around and consult with their neighbors, leave their seats without asking permission, and in other ways conduct themselves as they would in business offices.

Character may be developed through giving citizenship marks. In our junior high school marks are given in industry, loyalty, self-control, co-operation, and property care. In the senior high reliability, co-operation, initiative, and application are marked. In order to indicate to the pupil what these things mean, the explanation of each is printed on the senior high-school cards as follows: Do I do what is expected of me? Do I work well with others? Do I do things

without being told? Do I finish as well as begin well? These marks mean as much to pupils and parents as do their marks in scholarship. Pupils have learned that these marks are significant in the placement bureau, and their conduct is thereby influenced for good. They oftentimes return to teachers who have indicated weakness in one of these four characteristics and demand to know, for instance, why the teacher thinks that they have not "worked well with others." Principals, teachers, and supervisors emphasize the importance of getting good-citizenship marks.

Thus modern methods and notions in business education cause teachers and pupils to be concerned with well-defined initial position and ultimate life-work objectives, with a program of units leading to many different office and store positions, with an emphasis on the training of an individual through a number of years in well-balanced, correlated, and co-ordinated units of work. Continuous guidance, the development of desirable character traits, the co-operation with business men, and the establishment of a placement bureau—all these things have an imperative place in our modern methods of public business education.

How Shall We Finance Our Rural Schools?

By J. L. CLIFTON[1]

FROM THE TIME OHIO WAS ADMITTED as a state to the Union, the people have believed that education should be a state function. This has been more a theory than a practice. Ohio has always promoted home rule in government, until many people of every generation have defended this principle as an evidence of democracy. The willingness of the people generally to pay for education locally has made the state negligent in doing its part in carrying much of the financial load of the local schools. The result, from the beginning of statehood up to a few years ago, has been the local financing of public education. The inability of local districts to meet the constantly increased costs of local elementary and high-school education has awakened the state of Ohio to its responsibilities with respect to education. Almost all the people today who have given thought to present financial problems are agreed that the state must assume more and more of the costs of public-school education. We can no longer delay the matter of setting up the proper machinery to make this possible. We have, by constitutional amendment, made conditions such that levying a direct tax, locally, to carry this burden adequately is impossible. The state is now obligated to carry a greater portion of school costs than ever before.

The unequal distribution of wealth in the state has made it possible for cities in which the wealth is centered for the most part to carry on to a better advantage than the rural districts. The natural resources of the rural districts have little taxation value until they are converted into some commercial commodity of which the city makes use. The daily movement of coal, gas, oil, clay, and other mineral products from the rural districts to the cities illustrate this tendency. Nothing is left in the rural districts for taxation except the small wages paid for the production of these raw materials. If, by chance, a factory is located in a rural community, the chances are great that a small part of the community benefits by the creation of district lines that give to the few what should be enjoyed by the whole community. We are so accustomed to this practice that we take it as a matter of

[1] Former Ohio State Director of Education.

course. The per-capita valuations in the various school districts of Ohio vary to such an extent that, in most counties, we find some districts four, five, or even ten times as wealthy as others, on a per-capita basis. This is true in comparing one rural district with another. This is so common that we have accepted the situation without much thought or complaint. The public utilities of the state are found, for most part, in the cities and are taxed where found, for the benefit of the people within these city limits. If, by chance, a public utility extends into a rural community, only a small part of the rural community benefits by its taxes. Most of the hidden wealth which we call intangible is a part of the wealth of the cities.

Several influences have caused an uneven distribution of the rural population in Ohio. The rivers and streams influenced first settlements, for people gathered along them for convenience. When you follow these waterways up and down the state, you pass much of the rural population. The canals of the earlier days also attracted community centers along their routes. Later the railroads caused a still greater unevenness of concentration in population. The surveyor drew his county and township lines with the precision of an abstract mathematician, with no regard for the grouping of population. If two or three towns came within the civil township, it could not be helped. The lines must be parallel and six miles apart. The civil township line is still sacred in the thinking of many people of rural Ohio. The village of past generations need not be large before it was cut off from the township, and thereafter it would deny any responsibility for the rest of the district. This, in brief, is a history of the development of the school districts of our state. In late years we have, in part at least, broken down these township and county lines and are just now beginning to see a solution of the whole districting problem of our state. Better transportation facilities and better roads have helped greatly in the quick solution of this problem. We have, however, wasted much money in buildings that should never have been built, and we will in the future build many others before we come to realize that we must study this unequal distribution of people in rural Ohio.

The setting apart of one section in each township for educational purposes was wise, but the manner of using this grant has been much abused. The only evidence most of rural Ohio has today of this splendid program is the little interest money the several districts receive from the state yearly on our irreducible debt. The 2.65 mills state levy was worth much to some counties and little to others. This state levy may be considered by counties since the county, outside of the cities and exempted villages, is a unit for distribution. This, in

intent at least, is an effort to equalize the financial obligation of rural Ohio.

To review the efforts we have made during the last thirty years to equalize valuations and tax rates would be tedious and uninteresting, yet it is well to know that much progress has been made. The last effort the state has made to carry some of this financial obligation has been in appropriating money from the general revenue funds to help the districts in greatest need of money. This money has been designated "state aid," or using more recent terms, equalization funds. The amount has grown from a small appropriation twelve or fifteen years ago to $3,000,000 each year for the last two years. The legislature two years ago recognized a new need which was designated "rehabilitation." One million dollars has been appropriated each of the last two years for this need. These two funds were administered together in most of the districts receiving money from both funds. The great advantage, beyond the help to the districts receiving this aid, was the attitude developed in the state as to its responsibility in financing public education as a state function.

The Constitution of Ohio, in Article 6, Section 2, defines the attitude of the state in the matter of education as follows:

> The General Assembly shall make such provision by taxation or otherwise as, with the income arising from the school trust fund, will secure a thorough and efficient system of common schools throughout the state; but no religious or other sect or sects shall ever have the exclusive right to, or control of, any part of the school funds of this state.

We are at this time just beginning to interpret the full significance of this provision of the Constitution. Since the schools are obligated to do the best possible for all the youth of our state, it becomes a tremendous responsibility. It is not so much our business to determine the manner of financing our rural schools as it is to do the work efficiently and progressively after the funds are provided. It is, however, our duty to show the way to all the people of the state, and to interpret the responsibility of the state to the people, as far as financing the schools is concerned.

We are just now on the threshold of larger state participation in a uniform finance program. With tax limitations set up by recent constitutional amendments, it is necessary that the state provide out of general revenues more and more of the financial obligation of the schools. The taxation committee at this time has the matter under advisement and is doing a thorough and efficient work in building a taxation program that will insure a reasonable and just distribution of the state's income for education. When we think of the steps taken by the progressive states of this country and the amounts of

money set aside for education by state participation, we realize how slow we have been in coming to that understanding. I feel certain that, within the near future, the state will provide out of its general revenues at least two-fifths, and eventually one half, the money necessary to maintain the common schools of the state. It is not reasonable or just to expect a small community to finance its educational program independently. This burden has made a tax-burdened people negative toward education in general, and possibly justly so. The temper of the times requires the school administrators to deal wisely and economically and courageously with the financial problems of the schools. I am sure the county superintendents of Ohio understand their responsibility and also their opportunities, not only in mastering the financial difficulties they face at this time, but also in placing the financial status of rural education on a higher and more secure plane than it has ever enjoyed in our commonwealth.

The County as an Administrative Unit

By WALTER D. COCKING[2]

It has been recognized in the United States that education is the function and responsibility of the state. The state, therefore, is greatly interested and in the final analysis is responsible for the type of administrative organization which is set up. Most of the states of the Union have seen fit to delegate a considerable part of their responsibility for education to smaller units. In the earlier history of the country, this tendency was much more pronounced than at the present time. In fact, during the past ten years there has been a growing belief that the state should exercise much more control than formerly. With the large share of the responsibility for education delegated to smaller units it was hoped that more citizens would take a direct interest in the organization and management of the schools.

Engelhardt points out that the spheres of authority granted the school districts are conspicuously unlike in the various sections of the United States. It is also true that the types of local units set up under the jurisdiction of the state vary greatly. In New England, the school district grew directly out of the town and township. In most of the southern states, on account of the type of civil organization, and also because of its peculiar economic development, the county became the unit of school organization. In the mid-western states particularly, the small, independent district has been established

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in large numbers. It is virtually impossible today to mention any particularly local unit as typical of any large area. In late years the question has been raised with renewed emphasis as to what particular local unit is best for the administrative organization of schools, but the answer is not clear. Arguments may be raised for and against each particular type of local unit which is in evidence today. The purpose is to discuss some of the questions pertinent to the size of the unit best suited for the administrative organization of schools.

If we agree that the general aim of education in a commonwealth is the development of efficient citizens, and if we further agree that educational facilities are to be extended so as to provide equal opportunity for all within a state, then we are concerned as to what unit of administrative organization will most readily secure an equal educational opportunity for all in that particular district. This question has grown in importance during the past few years because of our shifting population. When schools were first started in this country people lived in relative isolation. There were no large cities. The country was primarily engaged in agriculture. It was unusual to have near neighbors. One community often was many miles from another. This condition tended to cause the establishment of school units which appeared best to meet the needs of the country at that time.

Today the situation is radically changed. The population has shifted from the country to the city, with the resulting tremendous growth in the number and size of cities. The industrial age is largely replacing the agrarian. Today in a state like Ohio the entire population lives in, or adjacent to, a large town. This condition and this situation have had their effect upon the establishment of schools and the development of a system of education. It is obvious that the type of education that was satisfactory fifty years ago might be totally unsuited to the demands of today.

Furthermore, the development of a network of highways with modern paving, the corresponding development in the type of character of the vehicles of transportation, and vast improvements in methods of communication have contracted distances, so that where once it was literally true that a state covered a great expanse of territory, today all parts within a state are in close proximity to any citizen of the state.

These conditions have had a great deal to do with the growing demand for a larger school unit in our densely populated states. It is a problem of considerable concern to administrators to determine what particular type and size of school district will give the greatest

educational opportunity and which at the same time may be economically administered.

We have known in this country four particular types of school districts. First, there is the small independent district, commonly found in Ohio and Iowa, and other mid-western states. The unit of organization in these small districts is a board of education of from three to five persons. Within such a district it is common to find a one-room school with one teacher and a handful of pupils. Thousands of such districts are in existence today. With the growth of cities has come the establishment of the independent city school district within boundary lines coterminous with the boundary lines of the city. This is the common type of district to be found in most cities of the United States. Still another type of district is the township. A particularly good illustration of this type of organization is to be had in Illinois, where the township high school has had its greatest development. Particularly in the southern states has the county been the unit of school organization, largely because the county in those states is the unit of civil government.

In addition to the types just mentioned there is a growing tendency to form special school districts which disregard other civil boundaries. These special units are scattered all over the United States. The consolidated school has done much to advance this particular type of district, as in most cases the consolidated-school district has largely disregarded civil boundaries. In certain states today, particularly in Mississippi, there is a movement toward what is called "super-consolidation," or a further integration of consolidated districts. The formation of this particular type still further disregards civil lines in the formation of school units. So great is the diversity in the type of units found and so many are the arguments proposed for each particular type that is it difficult to determine that any one type is best for all situations and under all conditions.

This discussion is to deal chiefly with the county as the unit of administrative organization. We propose to examine it in detail in an attempt to discover what good features of administrative organization it offers and what difficulties it presents. In an endeavor to analyze the county as a unit of administrative organization, it may be well to raise the question as to what elements are to be desired in an ideal school administrative organization. Ten are proposed:

1. A desirable unit of administrative organization should provide equal educational opportunity to all who live within its boundaries.
2. The schools should be directly responsible to the will of all the people.
3. The unit should be of such size as to command and secure trained educational leadership.

4. It should be one in which it is possible to enlist the interest of all the people living within the area.
5. The ideal unit should be large enough to make possible an adequate curriculum.
6. The unit should be of such a size that it is possible to secure trained teachers.
7. The school unit should be such that efficient instruction may be secured and adequate supervision provided.
8. The ideal school unit should make possible adequate and proper housing.
9. The ideal school unit should be such that there is wealth sufficient to finance readily the undertaking.
10. The ideal school unit should make possible an adequate system of education at an economical cost.

It is obvious that not all of these elements can be secured in all kinds of districts. No argument is needed to maintain that it is virtually impossible to secure these elements in many of the small independent districts and in many townships. While the small territory is conducive to securing the interest of the people and at the same time is responsive to the will of the people, it is of insufficient size and wealth to provide trained leadership, an adequate curriculum, trained teachers, efficient instruction, and good housing. Small districts do not have the ability to finance the undertaking properly and adequately, and desirable school situations cannot be secured at an economical cost. This situation confronts thousands of communities in the United States today. If a high standard of education is to be maintained and adequate educational opportunity is to be provided, the small district must go, and in its place must come a larger and more adequate unit.

Does the ordinary county provide such a desirable unit? In comparison with the small district, the answer undoubtedly is "yes." However, whether the county is the most desirable unit which can be proposed is another question altogether.

It can be said without fear of contradiction that the county unit offers greater educational opportunity than the small district; it may be made as responsive to the will of the people; it is of such a size that trained leadership may be secured; an adequate and a comprehensive curriculum may be put into operation, trained teachers employed, efficient instruction under good supervision developed, adequate school buildings erected, and costs kept at an economical level. All this is true in spite of the diversities which exist in the same county, in the same state, and between states. In a state such as Ohio, with a network of good roads reaching to every point in the state, with distances reduced to a minimum, the county as a unit

of school organization today may be considered much smaller than many of the small independent districts of fifty years ago.

The unit of school organization may be too large, as well as too small. Does the county provide approximately the proper size of school unit? No one answer can be made, for counties in the United States vary greatly in area, population, and wealth, as well as in the facilities of transportation and communication. It would appear, however, from a study of the situation that in general the county offers a more desirable unit for school organization than does the small independent district.

It may be well at this point to examine what is meant by the phrase "the county as a unit of administrative organization." I would interpret it to involve five specific things: (1) school control in the hands of one board of education elected by the people of the county as a whole and responsible to the people of the whole county; (2) the educational needs of the entire county considered as a whole; (3) the county the unit of taxation for school purposes; (4) the administration and supervision of all schools of the county lodged in one organization; and (5) all expenditures for education to be made for the county as a unit. You will readily understand that if these five principles are to form the basis for the administrative organization of a county many of the so-called "county units" in operation would not qualify as such.

A county unit established under these five principles would mean the elimination of all subdistricts and boards of trustees of special districts. It would mean the consideration of the educational needs of the entire county as a unit instead of the consideration of particular units within the county. It would mean the employment of personnel for all of the schools of the county by one legislative board. It would mean expenditures for school purposes made for the county as a whole rather than for special schools. It would mean that the county superintendent or the executive officer of the county board of education would become not only a legal officer, but a trained educational leader. It would mean that the wealth of all the county would be taxed to support all the schools of the county.

With the principles just enumerated in operation, how would the schools be organized with a county as the unit? Elementary schools would be established at such points as the concentration of population demanded. Junior high schools would be established at slightly fewer centers, while senior high-school facilities would be provided in still fewer numbers, but adequate for the needs of high-school students within the county. In other words, the schools of the county would be organized like any good system of schools in a city. Sites

should be chosen after careful study of the transportation routes, the growth and shifting of population, and other matters which affect this problem. It is to be understood, further, that adequate highways and means of transportation must be provided if the plan is to be successful and economical in operation.

Four necessary requirements for adequate school facilities in a county as a unit may be stated: a board of education elected by the people at large, fiscal independence of the county as the unit, trained educational leadership, and good roads with an adequate system of transportation.

The disadvantages and the advantages of the county as a unit of organization may be summarized as follows. The chief disadvantages arising from this type of organization are four in number: (1) The schools are still farther removed from the small community, and only a greater need in other respects should be sufficient to disregard this objection. (2) No civil unit is necessarily desirable as the unit of school organization, for boundary lines have not been set up about the centers of population. They have been laid off on straight lines by civil engineers without regard to population growth and physical contours. (3) Another great disadvantage of the county unit is the danger of political interference. It may be urged that this is not necessarily true. However, experience has shown that in too many cases where the county serves as the unit of school organization those interested in political power have sought to use the schools in getting and maintaining such power. (4) It may be urged as an additional disadvantage that the difference in wealth is so great in counties that in many it would be impossible to provide adequate educational facilities with the county as the unit. This is true in Ohio as well as in many other states. If the county is to be the unit of school organization, some means must be found to equalize the wealth of the state for school purposes.

Among the advantages of the county as a unit of school organization the following six are proposed: (1) it is administratively economical; (2) it more nearly provides adequate financial resources than does the small district; (3) it attracts better professional leadership; (4) it makes possible a more adequate curriculum; (5) a better-trained teaching corps may be secured and retained; and (6) it is possible to develop a better school morale. It would seem, therefore, upon examination that the advantages of the county as a unit of school organization far outweigh the disadvantages.

Maryland, Utah, and many of the southern states have the county as the unit of school organization. In other states such as Arizona, Minnesota, and Oregon this unit is optional. Maryland

has long been held up as an excellent example of the county-unit plan. The entire state outside of the city of Baltimore is divided into twenty-three counties in each of which the school affairs are conducted as one enterprise. The principles set forth in this discussion as necessary to a successful school organization in a county as a unit are in rather complete operation. The result has been that educational facilities in Maryland have greatly improved, more adequate educational opportunities have been provided, better-trained leadership secured, and, with it all, an economical administration of schools has been established. The results secured in Utah since the reorganization of the schools on the county-unit basis are much the same, and there are those who claim that the efficiency of the Utah school system today is in large part due to the elimination of the small school district. Kentucky, with a quasi-county organization, has reduced the number of school districts in that state from five thousand to a few less than four hundred.

In Arkansas during the past two years a complete survey of each of the 75 counties within the state has been made by officials of the State Department, with the result that small districts are being rapidly eliminated, some fifteen hundred having gone in the last fifteen months. These surveys have proposed an ultimate educational program locating elementary, junior, and senior high-school buildings in each county, setting up one county board in charge of all of the schools in the county, providing for professionally trained county superintendents, and proposing a taxing system with the county as the unit. Arkansas, which not long ago ranked forty-eighth among the states of the Union in education, is at present making more and sounder progress than most of the other states.

Florida outside of its large towns has a paper organization with the county as the unit. The machinery is there. Two things are lacking at the present time, professional leadership and adequate financial ability. Alabama is in much the same condition. However, in certain counties within that state where sufficient wealth is present outstanding county organizations have been developed. Montgomery County in the center of the state is outstanding in this respect. Most of the other southern states have at least paper organizations with the county as the unit. As in Florida, the two things lacking at the present are trained leadership and adequate financial ability.

As one from the South bearing a message to those of you who have lived in the past under more desirable economic conditions, permit me to say that we confidently look forward in the next two decades to a great development in educational matters. This is true not only because such a development is needed, but also because the

skeleton organization is present which will better meet the needs of the present time than is the case in many of the northern states.

The experience of those states where the county is the unit of school organization is on the whole favorable to this particular type of unit. Results seem to indicate that the county is more and more coming to be a preferred type of unit over the township and small district. It is probably true, on the other hand, that this particular unit will not meet the needs of the entire country; but there are those who believe that the county school district is the most desirable.

Legal provision should be made for easy administrative adjustments where facts show that an adjoining county can provide educational services to the children in neighboring areas more effectively and at a lower cost. County boundaries for school purposes should not be too rigidly maintained. I should urge that no state be rushed into the adoption of any particular type of unit. Time is needed to study the situation and to enlighten the public. It would seem to be a far better policy to continue with what we have for a time than to adopt all at once any particular plan before it has been thoroughly investigated and before adequate planning has been made.

I am of the opinion that no civil unit is desirable as the unit of school organization in all situations. I am sure that, as the centers of population grow and further developments in transportation and communication take place, units of school organization must be developed which disregard other civil lines. In other words, the best unit for a school organization is dependent on the area under consideration. All that can be said for the county unit is that, in general, it offers greater opportunity for the providing of adequate educational opportunity than does the township or small independent district.

Can the State Help the Rural Schools?

By FRANK PIERREPONT GRAVES[3]

THE SUBJECT ASSIGNED TO ME suggests that you would like to have a report and an accounting of my work during the past decade since I came to New York. If so, I will state at the outset that the question you have asked seems to be more and more the most important of all administrative problems, and although we are approaching nearer and nearer to a satisfactory answer, it has caused us many perplexities and innumerable sleepless nights. You know there is

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always much truth in the old statement that whatever amount in salary one receives about $3,600 a year might be said to be paid him for the pleasure of making him trouble. And if I seem to speak with considerable dogmatism and feeling about these matters, at least my confidence and emotions grow out of actual experience.

Despite the enormous variety of problems and perplexities to which any state educational office is subject, there are, after all, only two that are fundamental. These are the problem of the city and the problem of the country. But these two cover a multitude of sins, and have made many a state commissioner and superintendent grow neurotic and bald before his time. Both these bogies have their origin in finance. In each case the trouble is caused by inability to pay the educational bill. The cities are prevented from spending what they would like for proper school facilities; the country simply does not have the money to spend. Hence, in both instances it is clearly the duty of a state head of education to see to it that in some way or other these financial obstacles are removed and that all the children of the state obtain their birthright of a good American education. Unless he is willing and able to undertake this, in the face of enormous opposition and misunderstanding and often at his own peril, the prosperity of our great union of commonwealths will be threatened.

The financial problem of the city schools may always be passed over with comparative speed. It has been primarily caused by the failure of many citizens to realize the enormous progress that has taken place during the past generation in extending and adapting public education to the individual needs of everyone and by the enormous increase that has consequently appeared in the school bill. With the growing demands of other city departments, streets, parks, water supply, sewers, lighting, police, fire protection, and health supervision, the ordinary city budget would seem to be unable to stand the strain. This is especially true in the states, like New York and Ohio, which have a constitutional limitation on the amount of taxes that can be raised for municipal purposes. The situation is often acute, but we may be sure that somehow or other a city will always be able to maintain good schools. Where money actually exists and the people really wish to spend it, the means of doing so can always be found, whatever outworn limitations may be imposed by the state constitution. Either the legislatures or the courts will decide that the schools belong to the state, rather than to the city, and that their support should not be reckoned among municipal expenditures, thus making school boards financially independent, or, as in New York, the same authorities will find some device whereby the state may secure more income from the cities and then return it as state aid.

The financial problem in the rural districts, however, is far more difficult to solve. Here it is not a question of ways and means of securing permission to spend the money, but of not having the money to spend, or if sufficient funds are available, of not being so organized as to make equitable use of them. For more than a decade the farmers of the land have been passing through a financial crisis that might well alarm the most optimistic and courageous of men. While our country as a whole has been enjoying the utmost prosperity, the income of farmers has been relatively decreasing, and they have found it difficult to obtain the money necessary for schools or anything else. And their situation as regards education is made even worse by the fact that what little wealth they do possess is often, because of an antiquated, small-district organization, most unevenly distributed. In New York, for example, some rural districts have sources of income in abundance, while others find the support of even the most primitive schools a great burden. School taxes in the Empire State are largely levied on corporate property, and districts that do not happen to have within their borders telegraph or telephone lines, railroads or trolleys, gas or water mains, or pipe lines, often because of the very fact that these public utilities do run through the districts next to them, are thus obliged to go down deeply into their own pockets for the most ordinary school expenses. Indeed, some districts have to pay anywhere from two or three to thirty or forty times as much for exactly the same school facilities as other districts in their immediate vicinity.

As a result, the rural schoolhouses are too often old and rickety, poorly heated and ventilated, and generally unsanitary. They are not infrequently taught by the youngest, most immature, and most poorly trained of teachers, and in innumerable instances the pupils are unable to obtain the benefit of a high-school course. This is entirely wrong. The farm boy and girl have always been the hope of the nation. Let us never forget that in the past at least 60 to 70 per cent of our great men have been reared on the farm. The farm home and farm life have been the source of initiative, responsibility, industry, and moral living. This has not been because of the farm school, but in spite of it, and we should struggle unceasingly to see that the precious product of farm boys and girls is given a school training somewhat comparable to that of the city. It is almost criminal that those who are mainly Americans by birth and are best fitted by their manner of life to furnish the qualities most needed by our nation should be overlooked, while children of the foreign-born, who have settled in the city, are given a most effective education. America should never hesitate to educate the children who come to her shores from other

lands, but should she meantime fail to give the proper training to her own flesh and blood?

Obviously, in addition to a notable increase in school money through state aid, the rural districts of New York have sadly needed a larger unit of administration and taxation, in order that the burden of school support may be equalized. The district system may have been a natural and effective organization in colonial days, when we were settled in isolated groups, but it is now an outworn piece of machinery and has been abandoned by nearly all progressive states. It is as absurd to retain it as it would be to insist upon tallow candles in the day of electric lights, or upon stagecoaches now that rapid transportation by steam, electricity, and gasoline has been rendered possible. The necessity for equalization of the tax burden through an enlarged district can be seen with half an eye, but the method of securing it is quite another matter. "It is all very simple," we were once told by a noted authority in New York, "all you have to do is to give the people a county consciousness." This at present would be about as possible as to obtain a slice of the moon. To get the people of any state to adopt the county as a real educational unit all at once, when they have been used to a small district system for over a century, would require some sort of a latter-day miracle.

Fearing to attempt so abrupt a transition, the New York State Education Department a decade ago succeeded in securing the enactment of a township unit. This marked a decided advance and would probably be now doing a great work for the state had it been given a fair trial. Unhappily, just at this time the skyrocketing of living expenses began because of the war, and an enormous increase in school taxes and the attendant disasters completely confused the issue. The rural residents attributed all their troubles to the township unit. They voiced their discord in loud diapason, came down to the legislature in droves and succeeded in having the law repealed the very next year. Somewhat later another attempt at a solution was made through the bill for a "community unit," which was the outcome of an exhaustive survey conducted under the auspices of the so-called "Committee of Twenty-one." Although this committee was mainly composed of delegates from farm organizations, and the report was formulated by the leading experts on rural education of America, and every possible effort was made during a two-year campaign to explain the provisions of the proposed statute, the rural people promptly repudiated their own representatives on the committee, and the legislature did not dare to pass the bill.

The problem at length found a satisfactory solution, however, in

the legislative session of 1925 through the enactment of the centralized rural-school law. Under this statute, with the permission of the commissioner, anywhere from four or five to twenty or thirty common districts may be united in a centralized district on their own vote and receive all the state apportionments to which they would ordinarily be entitled under previous laws, singly and collectively, and, in addition, all the non-resident high-school tuition fees that would have been incurred, one-half the cost of all transportation, and a "building quota" equivalent to one-quarter of the sum expended for the building, enlargement, remodeling, or repair of any school within the united district. Under conditions so favorable, it is not remarkable that during the past three years an avalanche of requests, more than three hundred, for the laying out of such centralized districts has been descending upon the state office at Albany, and it seems to be only a matter of a short time before the much vexed problem of equalization will be on its way to a solution.

It has not, however, seemed wise to stop at this point. Another law was passed at the same session which makes special provision for equalizing the tax burden in all school districts employing five or more teachers and in consolidated districts maintaining a high school. This statute was based upon the scientific plan devised by Paul Mort, of Teachers College. While it has aroused widespread interest and is now receiving favorable consideration by all the most progressive commonwealths as a method of distributing state support, it is, of course, highly technical and statistical and has occasionally been referred to by those who are more direct and less scientific in their thinking as the "Paul Mort-em examination," which is performed by the educational coroner when a school system is pronounced dead.

I shall here give you only the formula used by the New York law without making much effort to justify it. The plan contemplates paying an equalization quota from the state on the basis of the number of teachers employed, but in as much as teachers cost more per pupil in sparsely settled than in populous districts and high-school teachers are more expensive than elementary, corrections have to be introduced into the formula, and a technique has been devised for transmuting the number of teachers into a "weighted" form. It has been calculated that the districts of the state should be paying a salary of at least $1,900 per weighted teacher, and, while that goal could not be reached at once, it was planned to reach that figure by 1930, and to have the state supply an equalization quota sufficient to bring this about, if the district is already paying at the rate of four dollars on a thousand in local taxes.

So much for equalization and its necessity. But even then some districts have not sufficient money to support good schools, and no species of legerdemain has even been devised to run schools without sufficient money, however equitably the little that is possessed has been distributed. Accordingly, something more in the way of state aid than an enlargement of the unit of organization was needed in the rural districts of New York. An endeavor was made to supply this need directly by means of an increased apportionment distributed on the basis of the number of actual teachers. In addition to all existing state apportionments quotas aggregating some nine million dollars were appropriated with the intention of helping out the country districts. While, to make the new law palatable, all districts of the state, city and village, as well as rural, had to receive increased quotas, the raises were made in relation to need, and by far the greatest percentage of increase occurred in the case of the country schools. That is, the apportionment was graduated in such a way that the state aid procured for weaker districts was proportionately larger.

Thus in New York by means of greatly increased state aid, larger units of taxation, and equalization quotas, the rural-school boy and girl are coming into their own and will be enabled before long to obtain an education somewhat in keeping with their deserts. Such are the solutions we have found to the fundamental problems in rural education, and such have been the experiences of a former university teacher when transferred to state educational administration.

Testing the Ability to Use Scientific Method

By RALPH W. TYLER[1]

INSTRUCTORS IN SCIENCE SUBJECTS generally emphasize the importance of teaching students to use scientific method in their thinking. Nevertheless, examinations which are used to determine the progress of students have usually tested the student's memory of the facts and principles of the science, and have not found out how well they have learned to apply scientific method. Instructors are prone to judge the success of students by examination results, and students are likely to determine from the character of examinations the emphasis to be given in study on the various aspects of the subject. Hence in science courses, it is important to test the ability of students to use scientific method.

In developing examinations at Ohio State University an attempt has been made to find out how well students have developed skill in scientific method. The first step in constructing such tests was to define scientific method in terms of student behavior. A student who is skilled in scientific method is able to formulate generalizations from specific experimental data, he can plan an experiment to discover whether or not a given hypothesis is true, and he is able to apply general principles to new situations. A valid test of scientific method, then, consists of three parts. Part I is made up of a series of exercises each of which presents experimental data, new to the student, from which he is asked to formulate a reasonable generalization. The following by Mr. Sampson, of the Department of Botany, is typical:

> When a number of tobacco plants were grown in the sun, it was found that the average dry weight of each plant was 31.40 grams, the average amount of water absorbed from the soil by each plant was 7.7 liters, and the average amount of salts absorbed from the soil by each plant was 3.04 grams. When similar tobacco plants were grown in the shade, it was found that the average dry weight of each plant was 31.36 grams, the average amount of water absorbed in the soil by each plant was 6.0 liters, and the average amount of salts absorbed from the soil by each plant was 3.51 grams.

Part II consists of a series of proposed hypotheses which are also new to the student. He is asked to describe an experiment which

[1] Ohio State University.

might be used to determine whether or not each of these hypotheses is true, as in the following sample prepared by Mr. Barrows, of the Department of Zoölogy:

The hibernation response of the frog is the result of low temperature and not the particular season of the year.

Both of these parts differ from the usual information examination in requiring no verbatim recall of specific facts. In the first part the facts are all given so that the student shows his ability to interpret these facts. In the second part the student's originality in planning experiments is tested.

Part III consists of a list of the important principles in the course and a series of situations requiring the student to apply these principles. This differs from an information examination in that the principles are given to him, but he must demonstrate his ability to apply them.

By experiment it was found that the student's answers could be graded accurately and that the test could be made highly reliable. It was also found that new forms of the test could be constructed which were easily and objectively scored, at the same time giving results quite similar to those obtained from the original forms of the examination.

The Study of Educational Disability

By HARRY J. BAKER[2]

It is the purpose of this report to present the methods and results of a study of educational disability conducted in the Detroit public schools. A more complete and detailed report of this investigation has occurred elsewhere in printed form.[3] The investigation was limited to a typical sample of elementary-school pupils who were either failed or conditioned in the fundamental subjects of arithmetic, handwriting, reading, or spelling. The study was made with the advice and assistance of Charles S. Berry, formerly Director of Special Education at Detroit. The investigation was so planned as to discover each case in as practical a manner as possible, to diagnose each as definitely as possible, to give each pupil special remedial instruction, and to determine the amount of improvement which resulted from the special coaching that was offered.

[2] Director, Psychological Clinic, Detroit, public schools.

[3] Baker, Harry J. *Educational Disability and Case Studies in Remedial Teaching.* Bloomington, Illinois: Public School Publishing Company, 1929.

The pupils were selected from seven Detroit elementary schools. These schools were in typical or average American city conditions but with median intelligence ratings slightly above that of the city-wide median.

The selection of cases was limited to pupils nine years of age, and this age was selected because it is probably the most representative age in the elementary schools. Practically all nine-year-olds are to be found in the first six grades of the elementary school and have ordinarily been attending school long enough so that any possible educational disabilities have come to light. A preliminary survey was made of the records of each of these 894 nine-year-olds, which gave information with regard to the general progress of the child, includ-

TABLE I

DISTRIBUTION OF THESE NINE-YEAR-OLDS BY HALF-GRADES AND BY X, Y, AND Z GROUPS

Grade	Group Z	Group Y	Group X	Unclassified	Total	Per Cent of Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)
A–I	1	.....	1	1	3	0
B–II	8	9	1	4	22	2
A–II	7	12	4	2	25	3
B–III	38	47	18	11	114	13
A–III	35	102	46	9	192	22
B–IV	35	167	107	21	330	37
A–IV	9	79	52	7	147	16
B–V	1	16	20	8	45	5
A–V	.....	1	11	3	15	2
B–VI	.....	.....	.....	1	1	0
Total	134	433	260	67	894	100
Per cent	15	48	29	8	.....	.....

ing his educational, physical, and mental records. The data with regard to their grade-placement by X, Y, and Z groups are shown in Table I. These pupils range in grade-placement from the advanced first grade to the beginning sixth grade. Fifteen per cent are of the Z or slow group, whereas in the city at large 20 per cent are found in this group; 48 per cent are in the Y or average group as compared to the 60 per cent in the city-wide distribution; and 29 per cent are from the X or fast group, as compared with 20 per cent; and 8 per cent are unclassified.

The progress of these 894 pupils by grades is shown in Table II. This table shows that 21 per cent of these pupils have repeated one or more half-grades, 63 per cent have made normal progress, 12 per cent have skipped one or more half-grades, and 4 per cent have made irregular progress.

After careful consideration it was decided to use the final marks issued by teachers in the previous semester as the basis for the selection of cases for investigation and remedial work. Although the author is fully aware that a complete battery of educational and mental tests would also have been desirable as the background for the selection of cases, some practical and comparatively simple basis of selection had to be made. It was believed that the final mark represented the teacher's cumulative opinion of the quality of the pupil's work during the semester and, furthermore, these final marks were the official record of the pupil's achievement. They also had the advantage of being easily accessible.

Later experience with the final marks for these pupils for the succeeding semester gave convincing evidence that persistently poor final marks in the same subject for two semesters was a much more

TABLE II

PROGRESS OF NINE-YEAR-OLDS BY SEMESTERS WITHIN X, Y, AND Z GROUPS

Progress by Half-Grades	Group Z	Group Y	Group X	Unclassified	Total	Per Cent of Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Repeated one or more..	75	89	11	10	185	21
Regular promotion.....	55	300	180	26	561	63
Skipped one or more....	2	31	65	6	104	12
Miscellaneous, skipped and repeated	2	13	4	25	44	4
Total	134	433	260	67	894	100
Per cent	15	48	29	8	.....	.....

reliable index of educational disability than the marks of a single semester. In fact, it was discovered in many instances that a pupil might be given the lowest mark of a five-point rating plan by one teacher in one semester and the highest mark by another teacher in that same subject at the end of the next semester. The results of this study indicate that one mark or estimate by a teacher is of doubtful prognostic value, although other investigators have frequently claimed to have proved experimentally that teachers' judgments are more accurate predictive measures than are educational or mental tests.

Upon the basis of teachers' final marks, 60 pupils of the possible 894 candidates were selected for special study since they had received final marks falling in the two lowest groups in a scale of five fundamental school subjects. The grade location by X, Y, and Z groups and their intelligence quotients by sex are shown in Tables III and IV. Table III shows that the pupils that were actually

selected for study ranged from the advanced second grade through the advanced fifth with the three ability groups, X, Y, and Z, represented. The median intelligence quotient of all these pupils was approximately 92; 39 were boys and 21 girls (*see* Table IV).

Intensive diagnostic work was undertaken with these 60 cases as a basis for the remedial work which was planned for them. The

TABLE III

ABILITY GROUPS AND GRADE-PLACEMENTS OF THE COACHED PUPILS

Grade	Group Z	Group Y	Group X	Total
(1)	(2)	(3)	(4)	(5)
A–II	1	1	.....	2
B–III	4	1	.....	5
A–III	6	2	.....	8
B–IV	11	10	2	23
A–IV	3	13	2	18
B–V	.....	3	.....	3
A–V	.....	.....	1	1
Total	25	30	5	60

TABLE IV

INTELLIGENCE RATINGS OF THE COACHED PUPILS

Intelligence Quotients	Boys	Girls	Total
(1)	(2)	(3)	(4)
70– 79	3	4	7
80– 89	11	7	18
100–109	7	4	11
110–119	1	1	2
120–130	1	.....	1
90– 99	16	5	21
Total	39	21	60

diagnostic work was chiefly of two sorts, personal or social and educational or mental.

Although the cases were selected primarily on the basis of educational disability, detailed information disclosed that many of these cases had rather serious personality or social drawbacks which complicated and contributed to their educational disability. In fact, 53 of the 60 cases had some unusual social difficulties or physical disabilities, which were serious obstacles to the progress of the program of educational restoration. The homes were fairly representative of the general social status, but only 14 homes truly co-operated with the

school in the programs of training and readjustment. Eleven of the cases came from unusually poor homes with broken families, both parents working, or with poor care and supervision. Thirty-three cases were considered as poor or very poor in their general personality development. They were characterized as over-aggressive or under-aggressive or as having some other type of anti-social tendency which did not permit them to fit into the social life of the typical classroom in the manner normally expected. In many of these cases improvement was made on the personal and social factors, but a few of the more serious cases continued to be troublesome, even to the special coaching teachers, throughout the entire program of the experiment. The results of this experience indicate that children with educational disabilities must be approached from many sides, and that all possible factors must be taken into account if a plan of restoration is to be truly effective. The list of psychological and educational tests given to each of these 60 cases included the following:

Psychological:
- Detroit Primary Intelligence Test, Forms C and D
- Stanford-Binet test
- Porteus Maze
- Auditory Rote Memory (Words)
- Visual Rote Memory (Objects)
- Motor Speed, Tapping
- Association, Opposites

Educational:
- Stanford Achievement Test (Primary), Forms A and B
- Ayres-Buckingham Scale
- Gray's Oral Reading Test
- Informal tests

The Stanford Achievement Test was given to all these pupils, as were certain other formal and informal educational tests. The Stanford-Binet test was administered as well as certain supplementary psychological tests, which are described in more detail in the earlier report. The results of the psychological tests, and, as far as possible, of the educational tests, were put into graph-profile form and were placed in the hands of the special coaching teachers throughout the period of the coaching and remedial work.

An attempt was made to correlate the educational disabilities with the psychological disabilities. The results are rather inadequate and unreliable because of the comparatively small number of cases to be found within any particular combination of psychological and educational disability. These results, however, have been presented in the detailed report for whatever they may be worth and should be chiefly of value to illustrate the technique which might be employed for more complete investigation with a larger number of cases. It was discovered, for example, that pupils who were unusually good in handwriting also tested unusually high in visual rote memory, in judgment

as measured on the Porteus Maze Test, and in speed of motor co-ordination as measured by a brief pencil-tapping test. On the other hand, pupils who were poor in handwriting were also very poor in spontaneous free association if measured by the Binet Test, poor in auditory rote memory, and in their orientation. The analysis of the psychological abilities and disabilities of these cases proved helpful to the coaching teachers in finding the points of greatest weakness or greatest strength for the remedial programs.

Three special full-time coaching teachers were employed for the instruction of these 60 cases for the period of one semester. These teachers had had no particular training in advance for this type of work, but they were instructed by the author in weekly meetings throughout the semester on the various phases of psychological and educational diagnoses.

In this particular experiment, the pupils who were coached continued to be enrolled in their regular classes, but they reported in groups of two or three for at least two thirty-minute periods a week in each subject upon which they needed special help. These children were removed from their regular classes at one period in which the subject of their disability was being treated in their own classroom and for the other period from some study or class in a subject in which they were unusually good. Thus they did not feel that they were being penalized completely by the loss of subjects which they most enjoyed, nor did they entirely miss the regular work in which they needed the most assistance.

It was believed that better results could be secured by this kind of organization than by placing these children full time under the special coaching teacher. Although each coaching teacher handled only about 20 cases during the semester, this number could be somewhat increased if the work were well standardized, but it probably should never exceed more than 40 to 50 pupils. In special work of this kind some free time should be allowed to coaching teachers for the maintenance of a system of records and also for conferences with regular teachers.

Sixty pupils of the total of 894 cases were selected for special remedial help, which is 6.7 per cent of the total number. If such a standard were established, it is recommended that a full-time coaching teacher be allotted to every elementary school with an enrollment of about 700 pupils and with service on the same basis pro rata for schools with varied enrollments. The teachers in this experiment divided their time between different buildings. The work was greatly facilitated by the exact diagnosis of specific defects and the

development of the proper personality and social background to stimulate these pupils to their best efforts. The arithmetic disabilities could be grouped under lack of knowledge of the simple combinations and the use of wrong processes. Spelling disabilities were chiefly concerned with a poor phonic analysis, slow writing, transposition of letters, and poor habits of work. Reading disabilities were concerned with inadequate vocabularies, miscalling words, poor phonic foundation, generally poor attitude, and discouragement through continued failure. Handwriting disabilities were chiefly characterized as too slow or too fast in rate or extreme deviations in size.

TABLE V

STANFORD EDUCATIONAL AGES ON INITIAL AND FINAL TESTS—FORMS A AND B

Educational Age Initial Test	Educational Age—Final Test									Total
	7–6	8–0	8–6	9–0	9–6	10–0	10–6	11–0	11–6	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
11–0	....	....	....	....	....	....	....	....	1	1
10–6	....	....	....	....	....	....	2	4	....	6
10–0	....	....	....	....	....	....	1	3	....	4
9–6	....	....	....	1	1	4	6	....	....	12
9–0	....	....	....	1	2	1	....	....	....	4
8–6	....	....	2	4	6	1	....	....	....	13
8–0	1	....	2	1	....	....	....	....	....	4
7–6	5	4	3	1	....	....	....	....	....	13
7–0	3	....	....	....	....	....	....	....	....	3
Total	9	4	7	8	9	6	9	7	1	60

The general results of coaching were measured both by the final marks given by the regular teachers and by the results of the Stanford Achievement Test which was used as an initial and a final test. The results on this test are shown in Table V. Gains expressed in the educational age of the Stanford test ranging from one year to one year, six months appeared in 13 cases. Gains of from six to eleven months were found in 25 cases, and gains of from one month to five were reckoned in 14 cases. No improvement was found in 3 cases, and losses of from one to four months in 5 cases whose intelligence quotients were 72, 76, 78, 82, and 91. The average gain measured by educational age was 6.9 months, which was accomplished in 4.5 months of time.

The correlation between initial and final educational age is .98 (Pearson r).

At the end of the semester the regular teachers were asked to determine the final marks of these pupils, and the coaching teachers were instructed not to assist them or to suggest in any way what

marks should be given so that, as far as possible, an impartial opinion could be gained from the comparison of these children with their own regular class groups. The results of the coaching in terms of teachers' marks for each main subject will now be presented briefly.

Thirty-nine of the 60 cases were coached in arithmetic, and 19 of this number, or 49 per cent, raised their final marks to a satisfactory standard.[4] Twenty-two cases were coached in reading, but only 8, or 37 per cent, made a satisfactory restoration at the end of the semester.[5] There was a much closer relationship between the opinion of the coaching teachers, and also the results of the educational tests, with the final marks of the regular teachers in reading than in arithmetic. Reading disability, apparently, is more closely correlated with intelligence and with general disability than is true of the more simple processes in arithmetic. At first hand, it may appear discouraging to realize that so little progress has been made after a semester of coaching. However, when one considers that many of these children were third- and fourth-graders and had become discouraged by three or four years of failure in reading, it can hardly be expected that in the brief period of one semester the evils would be completely corrected.

Twenty-two cases were coached in spelling and 9, or 41 per cent, made satisfactory restoration at the end of the semester.[6] Results in spelling were somewhat more favorable than in reading, but less favorable than in arithmetic. Six cases were coached in handwriting, and all of them made satisfactory restoration. In all the school subjects there were 40 successful restorations out of 89 disabilities among these 60 cases, or a total of 45 per cent.

A fairly complete report was prepared by the coaching teachers on each of the 60 cases.[7] Each case is described under the following heads: general statement of progress up to the time of coaching, the personal and social diagnosis, mental diagnosis, educational diagnosis, the description of coaching, results of the instruction, and the subsequent history after two years. A typical case is quoted by way of illustration.

Case No. 5, Girl; Grade A–IV Y; *CA* 10–0; *MA* 9–6; *IQ* 95; expected grade level 10–0.

This girl was properly graded and had fair ability for the Y group. Her group letter rating of C— corresponded closely to the [intelligence

[4] Baker, *op. cit.*, p. 66.

[5] Baker, *op. cit.*, pp. 73–74.

[6] *Op. cit.*, pp. 71–72.

[7] In the completed report 40 of these 60 reports have been given in full.

quotient]. Her supplementary mental tests . . . are somewhat higher than Binet [mental age].

Personal-social. She had a fair personality but was somewhat erratic and flighty. Her chief difficulty came from an unfortunate home environment. Her mother died when she was three years old, and her maternal grandmother, who was very hard of hearing, was caring for her. On account of the hearing defect her grandmother made little attempt to talk to her, which resulted in almost complete social isolation. A neighbor met the coaching teacher on a visit to the home and kindly volunteered to assist the girl with reading at home. Children, as well as adults, feel the need of interest, praise, and stimulation, which was lacking in her case.

Mental. Her range of mental results was from 8–6 in Binet Free Association to 14–10 on Visual Rote Memory. The low score of 9–0 on Porteus Maze reflected a lack of initiative which may have originated from her inadequate home environment.

Educational. She had received 4's in arithmetic for two semesters prior to coaching. Her initial arithmetic age was 10–0 which was six months above her mental age and equaled the expected-grade level. Her educational age was generally better than her mental age. She was found to be very weak in all the combinations in arithmetic, although this condition was not due to inherently poor memory as much as to frequent absence.

Coaching. Drill on combinations in arithmetic was begun immediately by the coaching teacher. The 2's and 3's were practiced in multiplication in many different ways. The chief method was to prepare flash cards with the combinations and then drill her upon the ones which she missed most commonly. In the regular class work she was hopelessly lost in long division, and part of her confusion came from inadequate mastery of the multiplication combinations. By the end of the semester she had a fair mastery of the multiplication tables through the 9's and her work in division also showed marked improvement.

Results. Her final mark raised from 4 to 3 in arithmetic, and her Stanford arithmetic age improved ten months in the four months' time between tests. She responded very satisfactorily to coaching, as compared with her previous status. Six of the factors confirmed the teachers' final marks, eight factors were doubtful, and none were negative. Attendance became more regular and greater interest was taken in her school work.

Subsequent history. The grandmother moved frequently and no subsequent history is available.[8]

Although detailed studies of cases which are known to a teacher seem naturally to be only of personal interest, they may prove significant as illustrations of methods in technique which were successfully applied. Investigations and case-studies of this type are of interest in the field of education, not only on account of the actual benefit to individual pupils, but as illustrations of methods of making education more vital and effective throughout its entire program.

[8] Baker, *op. cit.*, pp. 88–89.

When Is the Ratio between Nature and Nurture a Constant?

By M. R. TRABUE[9]

POPULAR IDEAS REGARDING SCIENTIFIC PRINCIPLES are usually inaccurate as to details and often wrong as to general significance. The more-or-less general notion that in human achievement there is a constant ratio between the contributions of heredity and of environment is probably no more reliable than the popular notions about other scientific subjects. The man without training in psychology tends to assume that it is just as possible for the psychologist to report in percentages the various proportions of native ability, hard work, and good luck that entered into any man's success as for a chemist to tell the relative weights of copper, sulphur, and oxygen in a given amount of copper sulphate. Perhaps the psychologist is flattered by the assumption, or perhaps he is only too busy to take the time which he knows would be necessary in order to make the untrained man understand the matter.

After all, what does the psychologist himself know about this matter? What are the implications and assumptions in the scientific discussions that touch on these problems? Do we believe that the ratio between nature and nurture is the same at the age of forty as at twenty or at ten? Do we have adequate evidence for or against the theory that the nature-nurture ratio is the same for academic intelligence as for social intelligence, mechanical intelligence, political sagacity, economic insight, bridge-playing skill, or golf scores? Is the relative contribution of environment the same in one man's financial success as in another's? All these and many other questions I have summarized in stating my topic.

I confess that I cannot answer the question. I do not know whether there is ever a constant ratio between heredity and environment. I have been thinking about the question and trying to obtain data bearing on it for about eight years, and although I have been forced by the data obtained to change my own ideas on the subject, I cannot state my conclusions with great assurance. I do not believe that anyone now possesses sufficiently valid data to make possible the formulation of a definite conclusion.

Instead of answering the question, therefore, I wish to make it clear that we do not yet know the answer, to indicate that there are good reasons for doubting the theory of a fixed ratio, and to show that the assumption of a fixed ratio has injurious effects on our re-

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search work in this field, as well as upon our educational efforts. In other words, I am convinced that one of the reasons we have made so little progress in this field is the fact that we have been trying to find out just what the ratio is, instead of trying to find out how it changes with increasing amounts of environmental opportunities.

Most of us would probably agree at the very outset that some traits are much more clearly subject to training than others. It is not likely, for example, that a maximum amount of training would make as much improvement in one's ability to distinguish among colors as would be made by a corresponding amount of training in his ability to distinguish among letters and words. Ability in spelling seems to be more specifically limited by one's original nature than does ability in reading. The ability to check the identity or difference of numerals arranged in parallel columns seems to be less extensively changed by increasing age and practice than the ability to solve problems in arithmetic. It is fairly clear, therefore, that the ratio of nature to nurture is much greater in some functions than in others.

What evidence have we with regard to the constancy of the nature-nurture ratio at different ages? The grasping reflex of the infant is clearly a case of much nature and little nurture. At a later age, however, the differences between children in the relative strengths of their grasping muscles are clearly due in considerable measure to differences in experience and practice. The country boy who has been required to milk six cows each night and morning for several years possesses much stronger grasping muscles than the city child who has exercised his muscles little. Twenty years later, when neither of these two has exercised his muscles on anything more strenuous than golf clubs and fountain pens for ten years, the differences between them will again be due in large measure to differences in inherited factors.

The children of the world are probably more nearly equal in their knowledge of English on their first birthdays than on any subsequent birthday. Perhaps a similar statement could be made for knowledge of French, of arithmetic, or of any other subject that might be named. Is it fair to say, therefore, that in knowledge of subject-matter the nature-nurture ratio is much larger in infancy than afterward?

Mr. Gesell at Yale has found it possible to measure the mental alertness of infants by recording and studying their growing control over their bodily movements. It is important to observe in this connection that each of these children has in this situation almost identically the same materials to work with: legs, arms, hands, and fingers. Using the date of conception as a zero point and counting

time by lunar months, Gesell finds that a child who shows twentieth-month reactions in his twenty-fourth month will almost certainly show thirtieth-month reactions in his thirty-sixth month. In other words, if mental alertness is measured in these early years by the control which children have attained over their uniform equipments of moving bodily parts, the differences discovered between children have a fairly constant ratio to each other and are apparently due almost altogether to their original natures.

Both S. A. Courtis, in his study *Why Children Succeed*, and T. L. Kelley, in his study *Nature and Nurture*, seem to come to the conclusion that, among the school children studied, the obtained differences in mental achievements were due in large part (95 per cent or more) to differences in original capacities, and in very small part (5 per cent or less) to differences in education and environment. At this point I wish to invite your attention to the fact that most of Mr. Courtis' subjects had spent their lives in the Detroit public schools and that most of Mr. Kelley's pupils had been trained in the schools of California. The educational provisions offered children at Detroit and in California are, as you know, among the best in this country. Here again, under fairly uniform and fully adequate environmental conditions, the differences among achievements of children were found to be due chiefly to differences in native abilities.

Educational opportunities and environmental conditions, however, are not adequate and uniform in all parts of this country. I recall that four or five years ago, before going west to spend a summer teaching at Stanford, I looked up the comparative costs of education in North Carolina and in California. Our average annual cost per pupil in North Carolina was approximately $30, while in California it was $130. The annual cost per pupil in other Southern states was even lower than in North Carolina. Would anyone be uncritical enough to believe that Mr. Kelley's findings prove that spending four times as much per pupil as we do in the South would not make more than a four or five per cent improvement in the achievements of Southern pupils? I cannot believe that competent thinkers would fail to see the flaws in such reasoning.

In collecting data regarding the achievements of southern children, I have always sought to obtain accompanying data regarding the number of months of educational opportunity each child had enjoyed. There are many rural sections of North Carolina in which school is maintained for only six months of the year. The average length of term is about seven and a half months, and many of the cities maintain their schools for nine months each year. The legal

period of elementary education in North Carolina and in a number of other southern states is seven grades, with a high-school period of four grades. It is possible, therefore, to find thousands of high-school pupils who have had approximately 42 months (seven years of six months each) in the elementary schools, thousands of others who have had approximately 49 months, others who have had 56 months, and still others who have had 63 months of opportunity to acquire an elementary education.

Instead of presenting page after page of data regarding the comparative scores of these groups who have had varying amounts of educational opportunity, I am reporting here only the general character of the results. Year after year the same story appears in the scores of these different groups of pupils. Whether one is measuring achievement in reading, in arithmetic, in language, or using mental ability tests, he finds that those who came through the nine-month schools have achievements about one year greater than those who came through the eight-month schools, and those who came through the eight-month schools have achievements which are about two years in advance of those who came through the six-month schools. These differences in achievement persist after four years of experience together in high-school classes. In other words, there is a close relationship in North Carolina between length of school term and ability in objective tests.

With no other information on which to judge the situation, you would have just as much right to say that if parents had possessed good intelligence they would have moved to communities supporting nine-month schools as I have to say that the children made low scores in the tests chiefly because of inadequate educational opportunities. We must admit that there is a certain amount of truth in both sides of the argument. The problem is much like the old query as to which came first, the hen or the egg. Mr. Bagley would probably agree that poor educational opportunities had produced low scores, and perhaps Mr. Terman would maintain that low intelligence had produced inadequate school conditions. Since the data come from the white schools of the South, with which I am well acquainted, I am convinced that the wide differences in achievement represent training and environment in larger degree than inheritance.

In answer to the obvious question as to why an intelligent parent would not move his children into a better school district, I can only answer that school training is not considered important by many of the parents in that section of the country. Many of these people have never yet seen any convincing proof of the value of book knowledge, which is about all that many of our schools offer. Good

soil and plenty of fertilizer are obvious necessities, but long-term schools are an expensive luxury in the minds of a large percentage of our southern farmers.

There is also a subtle loyalty to one's community which often holds a Southerner in spite of such desires as he may have for better economic and educational facilities. I have had in my classes this year, for example, a brilliant young professor of history in one of the small state colleges of the South. This man has intelligence, scholarship, an attractive personality, ambition, and all that goes to make up a successful college teacher. I told him recently that I would be glad to get him a good position in the Middle West that would pay him at once twice as much as he receives in the South with excellent opportunities for advancements, but he would not consider it for a minute. He seems to feel that he would lose caste if he accepted a position outside of his native section. Many southern parents feel, in a somewhat similar manner, that it would be a disgrace to move to town, even though the social, educational, and economic advantages of the town would be much more adequate than those provided in the rural districts.

Would it not clarify our thinking on this problem to make careful distinctions between the ultimate capacities of human beings and their actual achievements? We can admit without more proof than is already available that nature sets the limits for an individual's ultimate development and perhaps for the rate at which he can develop. The degree to which he will actually approach these limits must depend, however, upon the adequacy of his environment. The capacity to learn the Morse code and similar symbols may be inherited, but actual achievement in radiotelegraphy is just as clearly dependent upon opportunities offered by the environment. A child of Shakespeare's capacities born among savages in the jungles of Africa would probably have written no poetry, certainly no English poetry. Most of the disputes with regard to nature and nurture, I think, have arisen because of failures to make this distinction between ultimate capacities and actual achievements.

With this distinction in mind, what achievements could we expect from individuals of exactly the same native endowments, but with varying degrees of inadequacy in nurture? One of the most striking answers to this question that I have ever seen is a row of live-oak trees on Harbor Island at Wrightsville Beach, North Carolina. The trees in this row are all of exactly the same age and inheritance, but none of them has had adequate nurture. In fact, each of them has had a different degree of inadequate nurture. As a result they stand

in a graduated array, running from a height of about four feet at one end to a height of twenty-five feet at the other end. There is no doubt in my mind that all of these trees would today be thirty-five or forty feet high if only they had been adequately nurtured. Because they were inadequately nurtured, all of them are below normal height. Because each has had a different degree of inadequate nurture, each differs from the others in height. If all had received adequate nurture, that is, all the moisture, plant food, sunshine, and the like necessary to develop these trees to their full capacity, it is not probable that further differences in the amounts of nurture received by each would have made any appreciable differences in their heights.

The point I am trying to make clear might be helped out by a simple illustration. Suppose we should place three jars or cups side by side on a table out under the open sky. Let us say that the only difference in these jars is one of depth. They are all five inches

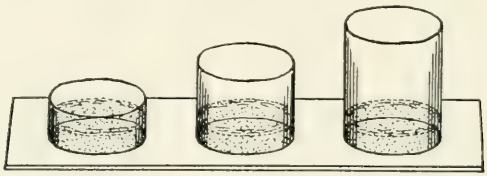

Fig. 1. Equal depth and volume (achievement) in unequal containers (nature) resulting from a uniform but inadequate rainfall (nurture).

in diameter, but one of them is two inches deep, another four inches, and another six inches. Let us suppose that it rains during the night, a one-inch fall of rain. The volume of water in each vessel in the morning would be equal, one inch deep and five inches in diameter. This volume represents roughly a result of inadequate nurture on unequal capacity. But suppose we should have six inches of rainfall, an adequate amount for the largest vessel. The volume of water in each vessel would then be exactly in proportion to their relative capacities, and even a twelve-inch rainfall would not change the results a fraction of a cubic inch. Additional amounts of nurture, over and above the amount that is adequate for the vessel of greatest capacity, would spill over and fail to make any difference in the acquired contents of the various vessels, as shown in Figure 1.

There is at least one large error in my illustration. To make it represent human capacities and achievements more accurately, the six-inch vessel should have a greater diameter than the four-inch vessel, and the two-inch vessel should have the smallest diameter.

In other words, it is probable that one who has a small capacity has also a small intake or rate of acquisition, and that one who has a large capacity has also a large receptive rate. In the case of the three jars, a one-inch fall of rain would leave a uniform depth of one inch in each jar, but the cubic content of each jar would vary in terms of the square of the radius of its opening. A five-inch fall of rain would leave a different depth and a different cubic content in each vessel, the two smaller jars being completely filled and running over, while the largest jar was not yet full. A six-inch rain would fill each vessel with an amount determined by its original nature or cubic capacity. May we argue by analogy that when nurture or opportunity is more than adequate for the individual of greatest capacity, there is little possibility of finding important differences in achievement due to nurture; but that when nurture is inadequate, the differences in acquirements will be due in part to differences in nurture and in part to differences in receptivity?

If this interpretation of the situation is sound, one might state the idea as follows: As the adequacy of an inadequate nurture increases, the differences in the achievements of individuals are due in a larger and larger number of cases to differences in nature. When nurture becomes entirely adequate for the individual of greatest capacity, the differences in achievements are due almost entirely to differences in nature. One might almost make a paradox of it and say that as you increase the amount of nurture you decrease its influence on differences in achievement, were it not for the fact that increases in nurture which are over and above an adequate amount make little, if any, change in achievements.

This idea of the relationships between nature and nurture seems so obvious that I always hesitate to present it, and yet it is not clearly stated or assumed in our published discussions. There are frequent suggestions in our literature of the necessity for finding the relative contributions to success of nature and of nurture, as if the ratio were a simple constant that could be found once and for all time. It seems to me that it would be much more profitable for us to study various types of abilities with the purpose of determining for each field the minimum amount of nurture and opportunity necessary for the full development of the most capable individuals in the field.

The answer to this suggestion lies, of course, in the fact of individual differences. Each individual has his own maximum capacity for learning each different thing that might be learned, and it would be difficult to determine beforehand just what individual had the greatest capacity, and still more difficult to say when he had been

given sufficient opportunity to attain his full development in that field. But it seems quite clear to me that both from the point of view of research and from that of practical educational work, we need to give more attention to the possibilities of a varying ratio between nature and nurture as long as nurture is inadequate. It is not fair to estimate native capacity to learn French by means of the amount of French various persons actually know, unless all of them have had much more opportunity to learn it than would be necessary to enable the most capable member to reach his maximum.

Both nature and nurture undoubtedly play a real part in determining one's achievement. Inadequate nurture is certain to produce lower achievements than adequate advantages would produce, although I doubt whether it pays to continue improving advantages which are already sufficient for the abilities of the group being trained. It is, I believe, this fact, that the advantages provided are already more than sufficient for the capacities of the pupils taught, which makes it so hard to discover statistically significant differences between good methods of teaching, adequate textbooks, and the like. If this theory is correct, the largest differences in such studies should be found with students of high abilities as experimental subjects.

For permanent improvements in the achievements of the race the theory leaves the burden on eugenics. There seems to be no way to improve the ultimate capacities and achievements of the race except through selective reproduction. But while we are pushing upward the limits of human achievement by means of eugenic measures, we must not neglect to strive for the highest achievement possible under our present limits by providing educational opportunities which will be adequate to develop our most capable minds.

The Contributions of the Psychology Laboratory to the Measurement of Reading

By G. T. BUSWELL[10]

By far the largest proportion of the literature on educational measurements is statistical in character and is based upon the notion that certain forms of behavior or mental responses can be "standardized," and that the reactions of any given individual can be interpreted by comparing them with these standards. Education has profited immeasurably by the statistical techniques which have permitted this process of standardization. It would be unfortunate,

[10] University of Chicago.

however, if anyone held the notion that educational measurements and standardized tests were synonymous terms. In this discussion I wish to deal with the type of measurement which is primarily analytical rather than statistical, and which is concerned more with the character of the mental processes which lie back of the results measured by standardized tests than with the measurement of the end results. I should like also to emphasize distinctly that there is in no sense any conflict between analytical studies and statistical studies of large groups, but rather that each serves a definite function in measurements and that one supplements the other.

Work in a psychological laboratory is tedious and time-consuming. Because of this the number of subjects with which a person may deal in a given time is much smaller than the number of subjects which can be tested by standardized tests. The chief function of the laboratory studies is to make analyses which will penetrate back into the details of a pupil's mental process and reveal facts which are significant for education, but which are not noted in the ordinary processes of crude observation. It is quite generally recognized among laboratory scientists that the supervisor, or the expert teacher, is the principal person who must interpret the results of laboratory experiments in terms which can be applied in the actual practices of classroom teachers. The majority of teachers do not have the time or the technical preparation necessary for reading and interpreting scientific reports. The laboratory scientist seldom knows the intimate details of classroom instruction sufficiently to suggest all the possible applications of the findings of his experiments. The supervisors, however, are acquainted with the details of classroom instruction, and are also fitted by their training to read and interpret the reports of studies made in the laboratory. Through the supervisors the laboratory technician and the classroom teacher are able to relate their work.

This discussion will deal with three problems relating to reading. The first of these is a problem of diagnosing, in a somewhat specific manner, the perceptual difficulties which a child experiences in mastering the mechanics of reading. The second has to do with the development of habits of rhythmic grouping of words into proper units of thought. The third is an analytical study of the growth of concepts of words.

It is assumed that this audience is already familiar with the general technique of photographing eye-movements in reading. In the eye-movement studies which have already been reported in great detail in educational literature, three basic habits of reading are

revealed. Each of these three habits may be made the subject of specific diagnostic and remedial procedure. These habits are: first, the development of a wide recognition span measured by the average number of eye-fixations per line in reading; second, the development of quick habits of recognition as measured by the average duration of fixation pauses; and third, the habit of regular rhythmic procedure across the lines of print as measured inversely by the number of regressive movements per line.

While the initial experimentation with these basic habits of reading required the use of elaborate apparatus and precise measurements, now that the general characteristics of eye-movements have been described the teacher may be able to make some practical use of the findings by the rough approximation to precision which may be made in counting eye-movements by direct observation. By referring to previous studies of eye-movements, one may find data showing the typical number of fixations per line in each of the grades of the elementary and high schools for a standard selection of reading material. By having pupils read this same selection, counting the fixations of the eyes for a certain number of lines and then computing the average, a figure may be secured which will be a sufficiently close approximation to a correct count to serve for diagnostic purposes. If a pupil is found who is decidedly below normal for his grade in number of fixations per line, the teacher may assume that this is a case which needs specific training in improving the width of the recognition span. Or if, on account of eye-movements where one keeps a record of the total number of fixations for a given number of seconds and then divides to find the average duration per fixation, a pupil shows a long average fixation time, one may have the basis for further remedial treatment such as flash-card exercises for speeding up the perceptual process. Still further, if one finds an abnormally large number of regressive movements per line, one may improve the regularity of the eye-movement habit by supplying easy reading material, selected at a level probably two grades below that in which the pupil is working, and then insisting upon rapid reading of this material.

To summarize, one may say that the evidence now available from the laboratory studies of reading may be used for specific analysis and remedial treatment of defects in the perceptual processes. Since these perceptual habits are basic to all reading, it is highly important that the pupil be carried to the level of mastery of them by the time he reaches the fifth or sixth grade in the elementary school. Consequently, the remedial devices mentioned would have their chief application in the third, fourth, and fifth grades. These procedures

are recommended only for those pupils who are notably below normal in reading, but, if used with the lower 10 or 15 per cent of the pupils, the exercises are well worth the time required of the teacher in administering them.

The second problem is that of developing habits of grouping words into proper units of thought rather than simply pronouncing them one by one in monotonous fashion. In order to secure evidence as to the habits of pupils in this respect, a group of children was asked to read a paragraph into a dictaphone. Afterward the dictaphone record was transcribed to a kymograph record by tapping a key each time a word was pronounced. By this method the time interval between words could be computed in terms of fifths of a second and charts could be made showing these intervals.

By comparing the reading of children who were mature in their habits with those who were immature it was apparent that the mature children grouped their words into proper units of thought, whereas those who were not so mature in their habits tended to read with a good deal of monotony. By extending the experiment with this kind of technique to cover various methods of teaching, it was found that the pronunciation of words in rhythmic units was a product of the kind of method used, and that where one used a method which emphasized the pronunciation of words as the objective in reading the result was ordinarily nothing more than a monotonous pronunciation of word after word. Where the primary objective of the reading method had been the development of recognition of units of thought, the rhythmic character of the pronunciation was much more marked. By synchronizing the record from the dictaphone with the record from the eye-movement camera one is able to determine what a pupil does with his eyes while making long pauses in pronouncing words when reading orally. The evidence from these synchronized records is perfectly conclusive that during the long pauses the pupil is not simply doing nothing, but is extremely active in examining the material with his eyes, evidently trying to overcome some difficulty which must be mastered before he can pronounce the next word. Quite frequently these difficulties were found to be difficulties of vocabulary, although in some cases they seemed to be periods of general confusion in which the reader was not getting correct meanings from his sentences.

In discussing the third problem, that of the development of concepts of words, I mean to distinguish between an inventory of the vocabulary possessed by a pupil at any given time and a detailed study of the gradual development of the concepts relating to any

TABLE I

RESPONSES GIVEN BY PUPILS IN GRADES I–VI TO THE WORD "DISCOUNT"

Response	Grades						Total
	I	II	III	IV	V	VI	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Satisfactory responses:							
1. Buy something cheaper (at a sale) (wholesale)	....	....	2	1	6	12	21
2. Give 10% discount; take 10% off the cost	....	....	....	1	4	9	14
3. Take money off the bill	....	....	....	....	5	2	7
4. To sell for less than you pay for it	....	....	....	....	1	....	1
5. To get back some money—not as much as ordinary price	....	....	....	....	....	1	1
6. Something like a discount would be 50%—pay less	....	....	....	..	....	1	1
Doubtful responses:							
7. A bank discount	....	1	....	2	2	3	8
8. Get something and get a discount	....	....	....	1	1	2	4
9. Discount some money	....	2	2	....	....	....	4
10. Get a discount at a store	....	....	....	2	....	....	2
Wrong responses:							
11. Not counting right	1	1	3	6	1	....	12
12. To have money in the bank	....	....	....	4	2	....	6
13. When you discount, you don't count	....	2	....	3	....	....	5
14. Put down in arithmetic and discount it; 8 −5 3 is discount	....	....	1	....	1	1	3
15. Have a charge account in a store	....	....	1	2	....	....	3
16. Return things purchased and get money back	....	....	....	....	....	3	3
17. To know how to count	....	1	....	1	....	....	2
18. Count it (money) over again	....	....	1	1	....	....	2
19. To pay more	....	....	....	....	1	1	2
20. I have kept dis count of my money (confused dis with this)	1	....	....	....	....	....	1
21. Count backward	....	1	....	....	....	....	1
22. Hear it when mother comes from town but don't know what it means	....	....	1	....	....	....	1
23. He discounted you if you gave him right money and he would not give you your money back	....	....	1	....	....	....	1
24. Buy something and pay part—the rest is the discount	....	....	....	....	1	....	1
25. What the storekeeper makes on everything he sells	....	....	....	....	1	....	1
26. What you have to give back when you borrow	....	....	....	....	1	....	1
27. To take money out of a bank	....	....	....	....	1	....	1

TABLE I [*Continued*]

Response	Grades						Total
	I	II	III	IV	V	VI	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
28. Means you can't have any more—don't want to give any more	....	....	....	....	1	....	1
29. What you get for money in the bank	....	....	....	....	1	....	1
30. Per cent	....	....	....	....	....	1	1
31. When you get some money	....	....	....	....	....	1	1
32. To put somebody out	....	....	....	1	....	....	1
Omissions:							
33. No response	38	32	28	15	10	3	126
Summary:							
Satisfactory responses	0	0	2	2	16	25	45
Doubtful responses	0	3	2	5	3	5	18
Wrong responses	2	5	8	18	11	7	51
Omissions	38	32	28	15	10	3	126
Total	40	40	40	40	40	40	240

particular word in a vocabulary. In my judgment the teacher of reading needs to have a far greater amount of detailed information concerning the stages through which the concepts of words pass in the development from total unfamiliarity to what may be called complete familiarity. In order to illustrate this type of measurement I shall draw upon an investigation which was conducted in the field of arithmetic in order to study the development of technical terms in that subject. It should be understood that both the problem and the method of study apply to the development of concepts of all types of words rather than simply to words in arithmetic.

One of the most interesting aspects of this development of vocabulary is the series of changes in concepts of words as children pass through the grades of the elementary school. In order to study these changes 240 children were selected from the six grades of the elementary school and were presented with a list of 25 words with the request that they give the meaning of the terms as they are used in arithmetic. Forty children were chosen from each of the elementary grades, and they were also classified in terms of mental ability, all levels being represented. The investigator and the child sat down together, and the pupil gave the meanings of the words presented. Some of the words were very simple, such as, *count*, *both*, *each*, and *enough*, while others were more strictly technical terms such as, *quotient*, *multiplier*, and *divisor*. Other terms used were partly technical, but were words which the child would prob-

ably hear outside of school as well as in the arithmetic class. Among these were such words as *discount, worth, average,* and *acre.* After the 240 children had been tested, the answers were classified and were grouped according to whether they were satisfactory, wrong, or doubtful. In Table I the responses given to the word *discount* are shown. It is particularly interesting to note the great variety of meanings which children attach to this word, and also to note that even children in the early grades are beginning to build up some definite concept of it. Tables such as this were prepared for each word in the list. They showed not only the gradual development of knowledge of technical terms, but they also displayed a large amount of information concerning the meaning of these words. Such a study emphasizes again the importance of specific attention to the development of technical terms.

In this discussion it has been pointed out that the laboratory has supplied types of investigations relating to measurement in reading which may be used advantageously in supplementing standardized reading tests. The methods of the laboratory are primarily those of analysis or diagnosis. The results of laboratory studies are valuable chiefly in helping teachers to understand in greater detail the mental processes of their pupils. While the more elaborate experiments which require complicated apparatus cannot be reproduced in the classroom, the findings from them can be applied, and they furnish a contribution which the teacher cannot afford to overlook if she wishes to understand how and why children read as they do.

Author's Note.—In the original address stereopticon slides were used to illustrate the preceding discussion. It is hard to present the material as clearly in an abstract without the slides.

The Handicapped Child

By CHARLES SCOTT BERRY[1]

THE MODERN CHILD HAS BEEN GIVEN a freedom unknown to children of previous generations. He exercises this freedom in a world increasing in complexity and characterized by rapidly changing social and industrial conditions. In such an environment obviously every child stands in need of wise guidance. But especially is this true of the handicapped child who is compelled to compete with the average child in a world fashioned for the latter. In this unequal competition he is taught by the traditional teacher who knows no psychology save that of the typical child, who uses only those methods of instruction adapted to the average child, and who holds all children up to the same standard of attainment.

The handicapped child can hardly look to the traditional teacher for wise guidance, since it is she who has specialized on his weakness and has failed to develop his strength. Understood neither by his teacher nor by his playmates, trained in failure and suffering from feelings of inferiority, the handicapped child leaves school exceptionally well prepared to become a dependent or delinquent member of society.

To be successful in the guidance of the handicapped child the following considerations must be kept clearly in mind.

1. Our educational, social, industrial, and political institutions have been created for the typical, not for the atypical, individual.
2. The handicapped individual is being trained to compete with individuals who are not handicapped.
3. The handicapped individual is much more like than unlike his normal fellows.
4. Few occupations tax the capacity of the average individual or call into play all his possibilities.
5. Few individuals are so seriously handicapped but that they are capable of meeting the requirements of some one vocation.
6. The world is interested only in what the individual can do, not in what he cannot do.

In the light of these fundamental considerations the one who is intrusted with the guidance of the handicapped child will seek to

[1] Ohio State University.

discover and develop his greatest possibilities, overcoming weakness through the development of strength. Is there any good reason why there should not be in every elementary school one teacher so trained that she can see the possibilities, and not merely the limitations, of the handicapped child?

The Elementary Principal

By J. L. CLIFTON[2]

THE BUILDING PRINCIPALSHIP of the elementary school is the key position of the whole educational system. The responsibility of carrying out the curriculum of the school depends upon the principal; the teachers of the building seldom rise above the vision and understanding of their leader. No school can make progress by continuing year after year the same kind of program. It is therefore necessary to inject new programs and practices into the elementary school every year. The principal determines, in great part, what these innovations are. The changes must be practical, pedagogical, and valuable.

Any elementary school to be worth while must have characteristics which in comparison outrank the other schools of the community. By the introduction of unusual and advanced ideas in education, the school builds up traditions which help greatly in its reputation in the school system. One building principal developed splendid harmonica players among the upper-grade boys, who brought distinction to their school on account of their mastery of this musical instrument. The building principal must have the ability to supervise classroom work. He must not be afraid of the responsibility of classroom supervision, for he should spend much of the school day in the classroom, observing the work being done there. A unified program in the building is the responsibility of the principal.

On account of the rapidly changing economic, social, and industrial life, the elementary school must at least be cognizant of these changes; and, to be most efficient, it should set the standards of the community. It is becoming more and more apparent that the purpose of the elementary schools is to prepare its students for the best possible citizenship. To do this, the pupils of the school must learn to appreciate the dignity of work. One of the essential results of elementary education is to have practically all the students who pass through the eighth grade understand their responsibility as citizens.

[2] Former Ohio State Director of Education.

This responsibility cannot be entirely understood unless the pupil knows something of what he is going to do in life, after his school days are over. Therefore, the most important foundation for future citizenship is built in the classrooms of the elementary school, guided and directed by the elementary principal.

The Diagnostic Method in the Supervision of Arithmetic

By G. T. BUSWELL[3]

IN MODERN EDUCATIONAL PRACTICE the use of diagnostic methods has come to characterize the expert teacher in the same way that specific diagnostic techniques have characterized the medical specialist. The fundamental purpose underlying diagnostic and remedial methods in arithmetic is to produce improvement in a pupil's work by discovering and removing the incorrect habits of work which are the cause of his errors.

Three types of diagnosis will be discussed. The first of these involves a rather elaborate technique which could not be used in the ordinary classroom, but which provides the means of detecting certain types of difficulties which are likely to go unnoticed by other methods of diagnosis. The second kind of diagnosis is semi-technical in character, but could be used in a school system in which rather simple apparatus is available. The third type of diagnosis is non-technical; it can be used by any supervisor or teacher who is willing to devote ten or twelve hours of practice to the technique before beginning to apply it. These three types of diagnosis will now be described in greater detail, and some implications for education pointed out.

The first method of diagnosis consists of photographing eye-movements in order to determine exactly what a pupil does in adding a column of digits. The methods of photographing eye-movements has been so frequently described in the literature that no detailed description will be needed here. While a pupil adds a column of digits, a photographic record is taken on a moving film which shows exactly where a pupil begins to add, how he proceeds up or down the column, and how long he pauses on each of the digits in the column. Photographs show that in adding the adult usually proceeds regularly up or down the column using about equal intervals of time for each combination. Elementary-school children seldom reach this degree of regularity, the most characteristic aspect of the pupil's procedure

[3] University of Chicago.

being a habit of skipping about in the column without regard to the order in which the digits appear. This is occasionally done in search of an easier combination, although some pupils seem to skip about in this random manner with no fixed purpose of any kind. In comparing the pupil's answers with the method of proceeding up or down the column it appears that the most accurate results accompany regularity of habits. From this type of investigation one may draw the conclusion that in teaching column addition it is advisable to insist upon regularity of procedure either up or down the column.

The second method of diagnosis follows the leads given in the first method. Since pupils proceed irregularly up or down the column, it is probable that the amounts of time required for each individual operation are also quite irregular. In order to determine this a simple kymograph was set up in which a time record in fifths

TABLE I

PERCENTAGE OF TOTAL TIME REQUIRED FOR EACH OPERATION IN SUBTRACTION

Pupil	Operation					Total
	1	2	3	4	5	
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	22	15	13	20	30	100
2	16	42	19	14	9	100
3	47	14	15	10	14	100
4	7	36	27	15	15	100
5	9	50	29	7	5	100

of a second was recorded, and parallel to this time record a line was given showing the points at which each successive operation in an example was completed. In subtraction this was done by tapping a telegraph key as the pupil wrote each of the digits in his answer. Likewise, the telegraph key could be tapped for each of the partial products and the final total in an example of multiplication. In the same way the amount of time required for each operation in division and addition was recorded. When the pupil had finished the example, the amount of time for each operation was read from the kymograph paper by counting the number of fifths of a second on the record between each tap of the telegraph key. A tabulation of the results for a group of pupils shows that wide differences exist in the amount of time required for the various operations, and that the simple processes which are presumed to be made automatic through the large amount of drill given to children are, in reality, far from automatic. This may be illustrated in a simple table which shows

the per cent of total time required for each of the five subtracting operations in the example 93021 minus 42765. Table I shows the results obtained by a group of five pupils in solving this example. The first pupil required 22 per cent of his total time for the first operation; the second, 16 per cent; the third, 47 per cent; whereas the fourth pupil required only 7 per cent of his total time (*see* column 1). For the second operation the third pupil required 14 per cent of his total time, while the fifth pupil required 50 per cent of his total time. Records such as these make it perfectly clear that pupils are far from uniform in the amount of time required for each operation, and that the large amount of drill which is commonly given has not resulted in a uniform mastery of the various combinations. Experiments in the laboratory have shown that uniformity can be developed to a great extent and the speed of the work improved by having a metronome beat as the pupils work, asking them to try to do one operation for each beat of the metronome. Rhythmic procedure may be developed to a high degree in the process of column addition and in somewhat lesser degrees for the processes of subtraction, multiplication, and division. Apparently, the customary methods of drill could be much improved if they were administered so that a pupil would need to perform each operation in approximately the same amount of time. At least such a method would serve to inhibit many of the fluctuations in attention which result in mind-wandering while the pupil works.

The third type of diagnosis may be carried on in any classroom by having a skilled observer make verbatim notes as a child does the ordinary operations in arithmetic. In carrying on this type of diagnostic work it is important that the diagnosis be based upon the actual observation of the child as he works rather than upon the answers which a child may give on a test paper. Frequently one will make a completely erroneous inference as to the cause of a mistake on a pupil's paper. As an example the following case may be cited:

> In subtracting 4 from 86, Subject 33, a third-grade boy, secured 81 as his answer instead of 82. If this were all the information available, the reader would doubtless infer that the mistake in the answer was due to unfamiliarity with the combination, 6 minus 4. As a matter of fact, the boy said, "6 and 4 are 10; 10 and 8 are 18; turn it the other way makes 81." He then wrote 81. His case was much more serious than it would have been if he had simply made a mistake in a combination, for he exhibited in his work the fact that he was entirely unfamiliar with the principles of subtraction. What he needed was not more drill on combinations but some instruction about the process of subtraction.[4]

[4] Buswell, G. T., with the co-operation of Lenore John. *Diagnostic Studies in Arithmetic.* Chicago: University of Chicago, 1926. p. 86.

The chief purpose of individual diagnosis is to discover how the child works when he proceeds in his ordinary manner. Consequently, the best method of making such a diagnosis is to sit down with the child, ask him to work orally, and then observe all that he does while getting the answers to a set of arithmetic examples. The teacher should not be concerned in this process with whether or not the child is accurate since the purpose is to discover just how the pupil thinks as he works. Mistakes should not be corrected during the process of diagnosis. The child should be encouraged to think out loud and to give every indication possible as to what he is doing as he works his examples. The teacher should make notes regarding the child's method, and as far as possible these notes should be a verbatim reproduction of what the child says. Following the period of actual diagnosis the teacher may classify the various habits of work revealed in her notes; she should then write a prescription as to the kind of teaching which the child needs for the process which has been diagnosed. If the teacher uses any one of the several diagnostic tests which list the habits of work or the causes of errors for the various processes, she will find it convenient simply to check on the list of habits the particular ones which each child exhibits. The method of teaching following this should be specific individual instruction in which the child's attention should be centered upon the desirable ways of working his examples rather than upon erroneous ways which he may have exhibited in the diagnosis.

The habits of work which the teacher may expect to discover can be illustrated in the following list of the ten most common habits observed in a large number of diagnoses of the process of addition:

1. Making errors in combinations
2. Counting
3. Adding the carried number last
4. Forgetting to add the carried number
5. Retracing work after partly done
6. Adding carried number irregularly
7. Writing the number to be carried
8. Carrying the wrong number
9. Irregular procedure in column addition
10. Grouping two or more numbers

In similar fashion the ten most common habits for division were:

1. Making errors in combination
2. Errors in subtraction
3. Errors in multiplication
4. Using remainder larger than divisor
5. Finding quotient by trial multiplication
6. Neglecting to use remainder within the example
7. Omitting zeros resulting from another digit
8. Using wrong operation
9. Omitting digit in dividend
10. Counting to get the quotient

A concrete example of the use of this method of diagnosis may be given. During the process of diagnosis the teacher makes verbatim notes of what the pupil says as he works. Afterward the habits of work are classified according to the various categories which research has shown to characterize the work of pupils for addition, subtraction, multiplication, and division. Some of the common habits of work in addition are shown in the following list:

HABITS OF WORK—ADDITION

- V 1. Made errors in combinations.
- 2. Counted.
- 3. Added carried number last.
- V 4. Forgot to add carried number.
- 5. Added carried number irregularly.
- V 6. Carried wrong number.
- 7. Proceeded irregularly in column.
- 8. Split numbers.
- V 9. Derived unknown combination from familiar one.
- V 10. Made error in writing answer.

(1) 8 + 4 = 13	Error in combination	Habit 1.
(2) 13 + 5 = 18	"13 and 5 are — 10 and 5 are 15; 11 and 5 are 16; 12 and 5 are 17; 13 and 5 are 18;"	Habit 9.
(3) 19 + 2 = 11	"9 and 2 is 11, bring down the 1."	Habit 4.
(4) 17 + 9 = 71	"7 and 9 is 16; 6 and 1 is 7."	Habit 6.
(5) 46 + 92 = 38	"6 and 2 are 8; 9 and 4 are 13." Omitted the '1' in writing 13.	Habit 10.

With the examples which follow the list of work habits the notes which were taken during the process of diagnosis are given. In the first example the pupil made an error in the combination and the teacher checked Habit 1. In the second example the pupil did not know the combination 13+5, and, consequently, began with a combination which he did know and worked forward to the correct

answer. The teacher, therefore, checked Habit 9 in the list, which is "Derived unknown combination from familiar one." In the third example the pupil said "9 and 2 is 11, bring down the one," forgetting to carry. The teacher, therefore, placed a check mark before the category "Forgot to add carried number." For each wrong habit which the pupil exhibited a check was made before the appropriate category. Altogether the diagnosis of this pupil revealed five specific habits which needed correction. The teacher must now proceed to teach this pupil the five particular items which he failed to do correctly.

Similar lists of habits to be corrected are made in the diagnosis of other pupils. With such specific lists of needs the teaching can be made effective, and the particular remedial measure needed by each pupil can be applied. Mass teaching is carried on only when new processes are to be explained; the major part of the teaching is specific and individualized. When the teacher discovers exactly what the pupil needs, more than half of the task of teaching him has been accomplished. A greater amount of time is needed in the beginning for making diagnoses, but in the remedial process the saving is even greater for no time is spent in teaching what the pupil already does correctly.

While a teacher may think that the individual diagnosis necessary to secure such specific information in regard to a pupil's work will require more time and energy than can be given to it, experience with a considerable group of teachers has indicated that the total amount of time required over a semester for this kind of teaching is no greater than the total amount of time required in ordinary classroom recitation. It does require somewhat longer to make the initial diagnoses, but the saving of time which results from specific teaching of what is needed rather than on general teaching covering much that is not needed soon compensates for the larger amount of time spent in the beginning. Furthermore, the increased effectiveness of specific teaching is so pronounced that the value of finding out exactly what the needs of the pupil are through some form of adequate diagnosis will be revealed to any teacher who will give this technique a serious trial. Real teaching must be based upon an analysis of the work of the pupil. The trend toward specific analysis of pupil difficulties has now become so pronounced that the older type of mass teaching is hardly justified in a subject where such specific types of errors may be located as is the case in arithmetic.

Can Our Course of Study Be Improved?

By FRANK PIERREPONT GRAVES[1]

To one who has an eye to the educational signs of the times, the present-day efforts to improve our public-school curriculums are much in evidence. No thoughtful observer can fail to be impressed with the awakening that has in recent years been taking place in the nature and organization of the subject-matter presented in our courses of study. Curriculum building and standardization of courses in both elementary and secondary schools probably constitute the most conspicuous activities of the day in American education. Certainly it is time that the needs of our young people should be given more consideration, and their courses of study be better adapted to life in American society at the present day. Until recently public schools continually lagged behind advancing civilization and made little effort toward meeting modern demands.

Life in America may be historically described as dynamic in nature and constantly accelerated in tempo. The progressive conquest of our continent, the increase of population from four to one hundred twenty millions and the steady migrations from Europe, the continual expansion of manufacturing, trade, and commerce, the development of an industrial revolution, and the concentration of business have all combined to produce a network of social and economic forces and controversies. In consequence, a set of most insistent and perplexing social problems has arisen, and the greatest wisdom and care have been needed to shape a curriculum that would prepare pupils for understanding and meeting the situation. Yet for many years the schools remained in smug isolation and seclusion. They largely clung to their academic traditions and made no serious attempt to keep pace with the ferment and momentum of industry, business, community life, and contemporary politics.

Not only did curriculum makers hold aloof from the developing American institutions and civilization, but they never fully appreciated the importance of taking the mental make-up of pupils into account. Until the last generation there was little recognition of the

[1] President of the University of the State of New York and State Commissioner of Education.

child as a bundle of undeveloped capacities and tendencies toward activity, dependent upon environment for proper stimulation. In the formation of a course of study practically no consideration was given to the varying natures, interests, abilities, and rates of learning of the children concerned. Pupils were regarded as passive objects, each of which was to be treated very much like every other, and courses of study were built upon a dogmatic educational philosophy that never had any real scientific support. The underlying conception of training was that of the intellectual reservoir, and the curriculum was constructed by laying out various subjects to be absorbed and formulating textbooks and syllabuses to be followed. The doctrine of formal discipline, or the ability to acquire power that might be applied to any purpose through the absorption of certain predetermined materials, supplemented the theory of the reservoir, and traditional subjects and memorization held sway.

Even the famous national committees, organized in the last decade of the nineteenth century to revise courses of study, such as the Committee of Ten and the Committee of Fifteen, and the contemporary writers of textbooks for the schools, consisted largely of college professors and other specialists in subject-matter rather than classroom teachers or professional students of child psychology. They stressed convenience in administrative organization rather than the adaptation of the curriculum to child activity, individuality, and creative self-expression. In shaping the work they largely adhered to a priori reasoning, subjective methods, and individual opinion; the results of teaching experience and the investigation of pupils' activities were practically ignored.

As a natural consequence of these reactionary tendencies, little account was taken either of the needs of the times or the nature of the child, and one course of study was continually copied from another. The general method of constructing a curriculum was that of paste pot and shears. Topics and subjects were occasionally added or dropped, but seldom was a complete reconstruction discussed before comparatively recent years. Advocates of activities, individual instruction, and an enriched curriculum, like John Dewey, did begin to appear by the opening of the century, but it was not until about 1910 that the reforms passed beyond the empirical stage. Soon after that time objective measurements were first used, and one of the results of their use was an inquiry as to the relative value of materials. Dead subject-matter began to be eliminated from our course of study, and by 1920 quite a number of school systems had come to organize a scientific procedure in curriculum revision.

Since then systematized attempts to reconstruct the courses in our public schools through quantitative studies have sprung up rapidly. Strenuous efforts are now being made to bring all courses of study into line with the best educational knowledge and practice. The method of paste pot and shears is everywhere being replaced by comprehensive endeavors to reconstruct the curriculum as a whole upon a sound scientific basis. Fully three-quarters of our city systems are making a general revision of their curriculums every five or six years, while nearly one-half do so at shorter intervals. Provision for the purpose has especially been made in the larger centers. Numerous cities, like Burlington (Iowa), Denver, Detroit, Los Angeles, Rochester, and St. Louis, have even established separate departments or bureaus of curriculum research in their school systems, and have initiated programs of permanent and continuous revision of the curriculum. Their organization of the work and the obvious benefits that have already resulted are rapidly proving examples and sources of inspiration to many other school systems.

Fruitful contributions to the revision of the course of study have also been furnished by certain agencies outside the public schools. The institutions generally known as "laboratory" schools have been especially active. Some fifty or sixty of these have been organized; among them have been the experimental schools at the universities of Chicago, Iowa, and Missouri, and most recently at Ohio State University, the Lincoln and Dalton schools in New York, the Francis W. Parker School in Chicago, the Park School in Baltimore, and the Beaver Country Day School at Brookline. While such laboratory schools have too often organized the curriculum around casual and random interests of the child and have sometimes lacked continuity and sequence in their program, they have succeeded in revealing fruitful centers of interest, developing creative self-expression, finding new materials, and finishing real contributions to the theory and practice of curriculum making. Likewise, independent bureaus of research, devoting considerable time to the curriculum, have lately been springing up at state and national centers and at various institutions of professional training. The most notable of the former is probably the organization connected with the offices of the National Education Association at Washington, and the best-known instances of the latter the staffs engaged in curriculum research at Teachers College, Columbia University, and at the University of Chicago.

Another sign of the times is the number of substantial reports on the progress in curriculum building in our public schools that have been presented of late years. Only the more recent and important

can be mentioned here. In 1920, through its secondary department, the National Education Association sponsored a series of reports of a Commission on the Reorganization of Secondary Education, which led to the provision of various subject-matter committees, that utilized all available quantitative studies in curriculum construction. Next, the yearbooks of the Department of Superintendence from 1924 to 1928 furnished an elaborate set of reports dealing with methods of revising the course of study in the elementary schools and in the junior and senior high schools. They also gave excellent descriptions of actual progressive courses in present-day school systems and of available investigations in curriculum building of the times. Finally, the Twenty-sixth Yearbook (1927) of the National Society for the Study of Education went more deeply and systematically into the matter through a symposium on the history, foundations, and techniques of curriculum making. By this means an effort was made to determine the general principles by which the curriculum should be selected and assembled, rather than to indicate how the matter was being attended to in given places.

This monumental report of the National Society grew out of the diversity of view among the leading workers in curriculum research. Despite their common desire to overcome the prevailing neglect of the needs of American citizenship and the mental nature of the pupil, they approached the matter from different points of view, and there seemed small prospect of reconciliation and unity of effort. Bagley, for example, was much more conservative in his attitude than the other investigators. While conceding the part played by tradition and imitation in giving certain subject-matter its place in the curriculum, he believed existing types of material to be the resultant of sifting and selecting through the years and to be now fairly well stabilized. Hence, he was opposed to any fundamental or rapid reconstruction. Certain other thinkers, represented by Kilpatrick, were more radical in their attitude. They maintained that the curriculum should be viewed primarily from the point of view of the present activities of the pupil, and that all material not in harmony with these needs, however sanctioned by tradition, should be scrapped. Moreover, they seemed to feel that, while proper social content and the organization of experiences should be gained in the process of learning, the matter of the product to be obtained for use in adult life is incidental and could well be left to take care of itself. They held that, if we aim primarily at the activities of adults, we are likely to forget about the needs and capacities of children. Another fairly large group of experts, while differing somewhat among themselves, agreed in maintaining that the curriculum should be based not so

much upon the present interests and activities of learners, as upon what they will need for effective living when they have grown up. They felt that educationists like Kilpatrick, because of their emphasis upon learning processes, had failed, like the old formalists, to recognize the factor of institutions and problems in the individual and social life of adults. Hence, Charters held that the appropriate material for the course of study may be accurately ascertained through "job analysis." This term, drawn from the industrial field, he did not limit to manual operations, but extended to a detailed and complete inquiry as to just what human beings should be expected to do in life, and then sought to embody a training for these duties and qualifications in the course of study. With the same general objective, Bobbitt undertook, in the absence of trained investigators, to have persons of practical experience in education decide upon a list of acquisitions and activities that would constitute a proper quality of human living in adulthood. Rugg, on the other hand, claimed that the outstanding adult capacities to be acquired could best be defined for the curriculum by frontier thinkers in civic, professional, and industrial life.

Despite their different approaches, all these groups of thinkers agreed in repudiating patchwork procedure in the revision of curriculums and were in fundamental agreement as to the needs of the child and society. Each recognized the value of the other's point of view, and believed that their divergence was largely due to differences in emphasis. It seemed wise, therefore, that they level the peculiarities stressed by each and synthesize their divergent views in a composite statement, and, in the light of such a reconciliation, co-operate in a constructive program. Hence, the Committee was formed by the National Society and a set of joint results presented. They readily harmonized their conflict of opinion by agreeing that in curriculum building attention should be paid both to the nature and interests of children and to the needs for effective living as adults. The recommendations of the committee have come to be characteristic of procedure in most progressive systems today. Patent efforts are constantly being exerted to meet both the needs of adult society and the interests and activities of the child as they are at present understood. Through the co-operative efforts of the Committee many of the principles that should be embodied in school curriculums have been crystallized. The implications of this new attitude are obvious and plentiful, and may well be elaborated here as principles applicable to curriculum construction everywhere.

In the first place, under such an interpretation, the course of

study can no longer be allowed to lag behind the march of American civilization, nor can the school hold itself in dignified and complacent isolation. Since no other agency, the home, church, press, or platform, can exert an adequate influence, the school must become a conscious means of economic, political, and social improvement in the United States, and its curriculum must definitely consider the problems connected with American life at the present day. If pupils are to be prepared to understand and meet the situation, curriculum makers should bring about a consideration of the merits and defects of American civilization, regardless of the preconceptions and fixed ideas of traditionalists. And, in the case of controversial issues, they should not be concerned in giving the pupils ready-made conclusions, with an air of finality, but rather in building in them methods of attack and an attitude of openmindedness, sympathetic consideration, and toleration. As we cannot anticipate the problems that our children will have to face, we can scarcely hope to furnish them in advance with definite solutions, but we can prepare them with some effective means of approach. Such a study of the changing needs of American society is gradually rendering our early academic attitude obsolete and bringing the curriculums into harmony with the present complex economic and civic life. Social studies are coming to be emphasized, and freedom of discussion and liberality of mind are being more and more encouraged in the public schools. Obsolete information and traditional studies are being steadily eliminated, and all the materials are being definitely related to a study of problems in present-day living.

The need of producing civic improvement through the school, however, does not mean that the function of prescribing the detailed contents of the curriculum should ever be assumed by a legislature. This procedure is altogether too common. Recent legislative sessions have demonstrated that education needs to be constantly on its guard against invasion of the curriculum through pressure brought to bear upon representative assemblies, particularly by organizations representing minority interests. The number of educational prescriptions enacted in various states and municipalities, especially since the Great War, has at times become rather alarming. Efforts have everywhere been made to control by legislation such matters as the teaching of nationalism, health, and prohibition; the conservation of life and property; humaneness and morality; and some legislatures have even passed regulations concerning the exact ways in which the Constitution, American history, citizenship, the Bible, the Ten Commandments, character training, evolution, fire prevention, safety first,

thrift, sex hygiene, temperance, and the effect of narcotics shall be taught in the public schools. Such dictation is demoralizing to the curriculum. No one will deny the right of the people to determine in a broad way through their representatives what the aims and purposes of education shall be, but it is obviously undesirable that they should undertake to prescribe the details of so delicate a task by direct means. Education has now become a science, of which the layman has little accurate knowledge, and the construction of a curriculum more than ever requires the skilled thought and organizing ability of experts.

If, however, the schools are to become the means of preparation for social and civic duties, we must broaden the course of study so as to lead to the social integration required in satisfactory community life. The term "minimum essentials," by which we ordinarily describe the common materials of the curriculum, should be extended to include all important attitudes, generalizations, and appreciations, and a full understanding of life's institutions and problems, as well as the conventional skills and facts, which long composed its exclusive content. This broader view of curriculum function has become generally recognized. The school is coming to be regarded as a social institution, capable of shaping ideals and habits, and through them producing community of feeling and action, even more than a place for the acquisition of common knowledge and skill. Instead of being merely a place to learn to read, write, and cipher, and to absorb specified information, it is felt to be a potential source of influence upon social living.

In seeking community ideals, attitudes, and habits, however, we must not overlook the importance of allowing for individual differences. The American people have committed themselves to the unique position of an education of all, rather than of a privileged few, and the reconstruction of the curriculum is at present the special point at issue in the growth of this ideal. We are becoming more and more dissatisfied with our courses of study on the ground that they were not designed to meet the needs of all. As far as large classes and a wide range of abilities will permit, we are now endeavoring to provide in our curriculums for several varieties of intelligence. Such adaptation to individual needs includes not only the general election of subject-matter according to interest and need, but also the growing tendency to offer within the same grade different courses of instruction to pupil-groups of different ability. The curriculum must be made to fulfill this fundamental principle of education.

From these obvious efforts of the schools to produce both social improvement and integration and to recognize individual differences

through the curriculum, it is also clear that their failure to take the nature of the child into account is rapidly disappearing. The old image of the mind as an intellectual reservoir and the conception of education as memorization or formal discipline have largely departed. The pupil is regarded as a creature of infinitely complex behavior, whose most striking characteristic is activity. True learning consists in having favorably modified his ways of responding. In activity he lives and moves and has his being, and to educate him is to fit him to perform well the various activities which make up his life. The curriculum should, then, be considered a succession of experiences that have a genuine lifelikeness for the pupil, the materials should be so selected and organized as to produce in him the development that will be most effective in controlling life situations.

For building a curriculum on the basis of this newer conception of education, logically the first step is the determination of objectives. After these goals are set up, the activities of pupils should be so planned and outlined as to assure their attainment. The Commission on the Reorganization of Secondary Education, for example, formulated as the seven ultimate objectives of education, "health, command of fundamental processes, worthy home-membership, vocation, citizenship, worthy use of leisure, and ethical character,"[2] and then considered through what activities these may be specifically achieved in secondary education. Practically, however, one has to follow a somewhat different procedure in constructing a curriculum through the agency of a teaching staff. Those engaged in directing curriculum revision have found that no statement of aims and objectives, however carefully worded, is an efficient guide to committees of teachers. Whatever educational philosophy the teacher has will have grown out of her classroom practice, and it is only the educational expert who can be expected to organize his thinking properly with regard to aims and objectives. If, therefore, the curriculum is to be worked out through committees of teachers, the membership should be composed of those who have had rich and profitable experience, and after their suggestions have been made, the material can then be criticized and reorganized by those who have thought in terms of the larger aims and objectives. While it is more logical to start with objectives and then determine the activities necessary to carry them out, it is more practical to reverse this procedure. In either case, however, the objectives, both general and specific, should always be stated as clearly as possible, and the activities selected for reaching these goals

[2] U. S. Bureau of Education. *Cardinal Principles of Secondary Education.* Washington: Government Printing Office, 1918. pp. 11–15. (Bulletin, 1918, No. 35)

should be arranged in sequence and closely connected. Finally, when the ultimate aims and the experiences necessary to accomplish them have been planned for each grade of the school, a statement of the immediate outcomes or achievements to be expected should also be formulated by the teachers and for the teachers.

This changed conception of learning and subject-matter has somewhat upset the orthodox classification of material into specific school subjects, such as spelling, geography, algebra, physics, and civics. The traditional organization tended to place related materials in separate groups and thereby often obscured meanings, principles, movements, and forces. To be understood properly, the content of the course should be studied in the relationships of its natural setting. A need has come to be felt for a new synthesis of knowledge and a grouping in broader units of much matter that is at present scattered through several different subjects. The conviction is growing that materials should be assembled from the point of view of the learner's needs, without regard to the field of existing studies. Hence, a movement is being fostered in the schools to break down the traditional demarcation between subjects and to reconstruct the curriculum in terms of purposes, activities, and problems. In such a formulation of the curriculum on a non-subject basis the laboratory schools have naturally tended to take the more advanced stand. Perhaps the earliest and most striking instance of this attitude is to be found in the work of the eight-grade elementary school organized at the University of Missouri, which divided the course into four types of activities, observation, play, stories, and handwork. Some other laboratory schools have not gone so far. The Lincoln School, for example, while formulating its elementary work in terms of creative activities, organizes its secondary curriculum around subjects of enlarged scope, such as general science, social studies, and general mathematics. These liberal tendencies in the reorganization of material do occasionally appear even in public systems. Possibly Burlington, Iowa, under the guidance of Rugg, has come nearer to a grouping of school work into activity units, "languages," "health and happiness," "social science," and "mathematics and construction," than any other city.

Bobbitt, believing that curriculum making is not likely to be completely emancipated from departmentalism for some years, proposed for Los Angeles that, as an approximation, existing subjects be meanwhile grouped anew into many fields of large and flexible scope.

To promote these advanced steps which are being taken toward improving the curriculum content and organization arrangements

for a continuous study and careful revision of existing materials have been found to be essential. The rapid changes in American life require a rapidly changing course of study. The curriculum is constantly becoming obsolete and should be continually in the educational melting pot. The complexity of the situation has brought about a careful analysis of all the factors. Provision for such continuous rebuilding of the course is being made in many cities through the organization of special bureaus or departments, and similar agencies are springing up in other systems. In all this investigation objective methods and quantitative measurements have gradually become determining factors for the selection and organization of materials. A constant and scientific procedure in revision must soon come to be carried on everywhere.

Quite as essential to the success of revision as the original formulation of new courses is the procedure now coming to be utilized in testing and evaluating them in a formal and objective manner. All units of curriculum material, to be acceptable, need to be subjected to the test of careful classroom experimentation. Such scientific appraisal should everywhere replace the subjective judgment of the superintendent or other administrative officers, as has been common. It has already become effective in certain progressive cities. St. Louis, for example, has adopted the policy of trying out new courses in various schools and classes, and has its revision committees meet at stated intervals to consider the difficulties encountered and receive constructive criticism after the courses have been put to the test. At Denver trials are continuously being made of proposed courses under expert appraisal, especially in the "curriculum school" designated for the purpose; much the same practice prevails at Detroit and several other advanced centers.

An adequate and permanent organization for carrying on this work of continuous revision and appraisal would now seem to be absolutely indispensable. Such organizations are being generally established and are constantly being improved in urban and even in rural districts. Usually the work begins in the cities with committees of teachers under the direction of principals or heads of departments. At first, active teachers are likely to be temporarily assigned to this service, but before long ample funds are provided to secure substitutes and clerical assistance for teachers engaged in this service. Moreover, as the work becomes completely differentiated, it is generally recognized by the appointment of a special agent for its management, whose rank and control tend to increase in dignity. He is perhaps known first as "supervisor" and then as "director" of curriculum construction, and eventually attains the status of an assistant or

associate superintendent. Thus the permanency of the work is placed on an evident parity with that of officials of the city system directing the functions of administration, finance, or buildings. While in the country the organization has nowhere become quite so elaborate, some states and counties have already established permanent committees to give continuous revision to rural curriculums, and it is possible that eventually the procedure there may become quite as completely organized as in the cities and villages.

It is obvious from the improved nature of the organization that curriculum revision must now become a co-operative enterprise. The time has surely gone by when a superintendent can evolve a curriculum from his inner consciousness or manufacture one from those of other cities with paste pot and shears, and impose it upon his schools. The superintendent of schools and, within a more restricted sphere, the principals of the various buildings should, of course, formulate general policies and plans for the guidance, leadership, and co-ordination of all the factors in their particular districts or the school system as a whole. They should have final decision on all problems that arise within the various parts or the entire professional organization, but they should not take the initiative in planning the details of curriculum revision. They may suggest and approve, but they are not close enough to the classroom to propose, much less dictate, the details of the work. The original proposals should be formulated by committees of teachers and passed up to the superintendent or a board of final decision composed of members of the school board and appointees of the superintendent, for approval, modification, or rejection. Under the general or executive committees of teachers and administrators on suggested curriculum may well be subcommittees who are most closely in touch with the work of the various grades or departments. These committees should also be assisted in their conclusions by a committee of experts who would digest the results of research in various fields, such as curriculums in other systems, American life, child learning, and educational administration, experimentation, and measurements. Such a committee might join with the general committee in reporting to the superintendent or board of final decision.

Participation in the organization for curriculum revision need not, however, be confined to the professional staff. Lay citizens may to advantage also be given a voice in the plans for reconstruction. School patrons, for example, have some good ideas as to the needs and development of their children, and while they may be quite unprepared for curriculum suggestions at first, their interest and

powers will grow with experience. Likewise, citizens who are experts in the various adult activities and responsibilities for which the pupils are being prepared, leaders in civic affairs, philanthropy, health practice, industries, commerce, and other fields of human functioning may well be supposed to know something of the qualities and abilities that lead to success in adult life and be called upon to make suggestions to the committees of teachers on the formulation of a curriculum. Various public organizations, chambers of commerce, professional and business associations, service clubs, women's clubs, city and school libraries may also offer advice on elements in the curriculum through their appropriate committees. In some such way the entire community is now coming to join hands with the superintendent and his professional staff in an organized and co-operative effort to perform a task of most intricate and manifold nature. The curriculum may thus become a product of the give and take between the best and most experienced minds in the school system and the community at large.

In order to promote a growth of this co-operative spirit, the teachers, especially, must be infused with a desire for curriculum revision and be given a careful training in its technique. At present the reactionary tendency within the schools themselves is perhaps the greatest stumblingblock in the way of scientific reconstruction. As a whole, our teachers still need to be aroused and enlightened. The teacher is a natural conservative. She is too often inclined to protect her own special branch or grade and defend some vested interest, and sometimes lacks both the knowledge and incentive necessary for improved curriculum building. Our training institutions should therefore seek to acquaint embryo teachers more fully with the principles and practice of curriculum construction, and special efforts should also be put forth to prepare them during service for the activities connected with the courses of study. The more progressive cities have all made provision for this improvement in service in various ways, according to their situation, size, and wealth, and the need of a definite training for understanding and utilizing new curriculums is now being generally recognized and met.

Such careful preparation for curriculum building is indispensable for teachers because of the leading part that we have seen they are bound to take in the work of revision. Because of meager training and a heavy program, they may need suggestions from persons specially trained and experienced in curriculum making, but it has usually been found wise to have the teachers participate as fully as possible. Such co-operation is essential not only because their immediate contact with the pupils affords teachers the best opportunity to

judge of the appropriateness of materials, but also because it contributes to the morale of the staff not to place them in the position of just accepting what is handed out in a course of study fixed by outsiders. It is also important that teachers should get a dynamic, rather than a static, view of curriculum construction. Only through the active interests and intelligent efforts of those who are to use it can the curriculum be made most effective.

Nevertheless, there is much left for the superintendent to do. It will take all the wisdom, knowledge, and assiduity of which he is capable to institute and insure the co-operation of the teaching force in curriculum revision. Here, as elsewhere, he holds a fulcral position, but his work is of value only as it makes the greatest efficiency in the teaching process possible. One of his most important duties rests in the organization and functioning of a permanent bureau for the continuous revision and testing of curriculums, and in encouraging and training his teachers to take part in this work. To perform this important duty of seeing that a thoroughly modern and constantly up-to-date course is drafted for his schools, the superintendent must have the mental ability and breadth of view necessary to shape the general plans and policies for revision and to choose his subordinates for the purpose wisely and to inspire them with his leadership. The field calls for intelligence of the highest order and for all the knowledge and experience that the educational administrator can command.

Educating the Whole Child

By JAMES D. STOVER[3]

THE DAY HAS GONE WHEN we were concerned primarily with the mental development of the child. The child is more than mind. Recently we have been giving considerable emphasis to the physical development and health program, and it is well we have. But the child is more than mind and body. How he thinks and acts may be conditioned by many factors operating in the emotional realm of his being. His likes and his dislikes, his attitudes, his traits, and his habits are all functioning to make him what he is. He is the grand total of all these things. Hence in our consideration of this business of education we are faced with the problem of the whole child.

Perhaps the most important part of a child's life is not now spent in school, and possibly, too, his most fundamental habits, attitudes, and traits are well established before the responsibility of the school

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touches him, for it makes a world of difference what kind of boy Johnny is when he first arrives at school. He may have come from a home of culture and refinement, or he may have come from the congested district of a city. He may be robust and strong, or he may be under weight and anaemic. He may be bright, or he may be dull. He may be socially inclined, or he may be timid or even anti-social in nature. He may have perfect eyesight, perfect hearing, and perfect teeth, or he may be defective in any one or all of these. He may have kindergarten and nursery-school training and experiences; the chances are he has not. He may have developed certain mental traits and attitudes which are not wholesome; the chances are he has. At any rate, this is Johnny, the whole of him. He is different from every other boy entering school, and let us hope he will always be different.

School people have learned that when a child enters school at the age of five or six years many habits and traits are firmly established, frequently much to the detriment of good school work. What a wonderful thing it would be, if, instead of the teacher being under the necessity of correcting bad language habits, she could start with him in the development of proper habits from the beginning or receive him from the hands of someone else who had done so.

The necessity of doing something for the pre-school child which will make his life more wholesome upon entering school has given rise to two general movements: a systematic training of the young child, and assistance given to parents with home problems. The former includes nursery schools, clinics, and special schools wherein the environment is definitely controlled and much thought given to the physical and mental welfare of the child. The parental-education movement is sponsored by such organizations as the National Congress of Parents and Teachers and the local mothers' clubs.

Two other progressive movements in the direction of the whole-child development are character education and mental hygiene. A conscious effort is being made today to teach character throughout curricular and extra-curricular activities. The newer science of mental hygiene is engaging the attention of school people, as well as that of psychiatrists and psychologists, and is throwing much light upon the emotional life of children and the importance of cultivating and maintaining a balanced personality. After all, these and many other factors depend upon the individual teacher, her training, her personality, and her interest in and love for children.

A College Teacher Looks at Composition

By JAMES F. FULLINGTON[1]

BOTH THE NATURE AND THE ACHIEVEMENT of the freshman composition course in college are largely determined by the effectiveness of language teaching in the high school. It is generally held that the function of the high-school course in composition is to develop in the student knowledges and skills in the fundamentals of writing, leaving to the college the task of perfecting him in the larger or the more finished aspects. But in practice we find that the average boy or girl who comes to college has not mastered the fundamentals of written and oral expression, with the result that a great deal of composition teaching in the college must be directed, not to perfecting the student's expression, but to providing him with elementary language skills.

Thus, the conventional methods of teaching composition in the high school have shown by their results that they are inadequate. A change must be made in them if teaching is to become thoroughly effective. In any such revision there are five principles which the teacher must observe if he expects to achieve a fair degree of success.

First, instruction in the elements of writing and speech—spelling, grammar, punctuation, and sentence structure—should be given only to satisfy the real and immediate needs of the students, as shown in their written and oral discourse; and this instruction should be given in direct connection with the student's own speech and writing, not by itself or for itself. To this end the course of study also should be kept informal and flexible. Every bit of speech and writing of the students should be regarded as language activity and marked and criticized as such, not only by the English teacher, but by every teacher in the school. Also, all composition activity should be based on the individual interests and capacities of the pupils. The teacher should therefore avoid any restrictions upon the form or content of the student's speech and writing, except in such communications as his reports and examinations. Finally, all teaching should aim at mastery, which in composition should be regarded, not as the command of a body of technical skills and knowledges regardless of

[1] Ohio State University.

whether the pupil has any need for them in his own expression, but as the command of such skills and knowledges as will enable the pupil to express what he wants to say.

Literature for John Doe

By FRANKLIN D. BAKER[2]

In using the legal name "John Doe" in my title, I mean by John Doe, as they do in law, everyone the name happens to fit. It might be Jane as well as John. He, or she, is the equivalent of Everyman in medieval theology, or of the public of today. I shall devote a part of my time to the interests of the adult; but most of it to that literature which, whether originally written for adults or not is now read in the high school; for these high-school pupils are probably our largest reading public.

This literature, then, that is read by everybody, what is it? What should it be? How may it be disseminated and made more interesting? How, if at all, can the level of the reading public be improved and raised? These, in brief, are the topics I want to discuss somewhat superficially at this time.

There is an enormous amount of reading done. The newspapers and magazines alone, though never read entirely, make up an immense volume of actual reading. This is the obvious result of the increased facility and cheapness of printing and of the wide spread of our democratic system of education. To emphasize the comparison with the past, recall the tragedy of Edgar Allen Poe, who lived in poverty because he came twenty years too soon to make a fortune by his stories. Magazine reading did not become widespread until after Poe's death. The conditions were not ready for him. Just imagine what our popular magazines would pay Poe today for a story, and how the best monthlies would welcome his critical articles.

It is not merely the bulk of reading today that strikes one, but the range of it: everything from tabloids to the *Yale Review*; from Bernarr Macfadden to Bernard Shaw; from the *Black Cat* to the stories of Priestley; from the local gossip of newspapers to biography and science; from Edgar Guest to Robinson.

One of the best sellers a few years ago was a book on philosophy; and the dealers will sometimes tell you that they sell as many biographies as works of fiction. I shall not discuss the reason for

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these differences. They are not wholly the result of education. People are born different. You have heard the story which William James liked to tell about the carpenter who worked in his house, a man of a philosophical turn of mind. He said one day, "Mr. James, there is not much difference between one man and another, is there?"

"No," said Mr. James, "there isn't."

After a pause the carpenter said, "But what there is is mighty important, isn't it?"

"Yes," said Mr. James, "it is."

These individual differences are real, and they are important. There is this wide range of interest and capacity. We have to accept it. We may as well be tolerant about it. Mrs. Malooly, scrubbing the marble floors of Manhattan, has as much right to her tabloid story as you have to your Thackeray. The office boy has as much right to his thrill as the boss has to his political news. It is just as right that these people whose training and whose endowment limit them in their reading should have the kind of thing they can read, as that you who are more fortunate should have the thing you want to read. Certainly it is better to do some reading of any kind than to do many things that one would be doing if he were not reading. At least, it is a way of employing leisure. And there is much concern in the field of education over the matter of education for leisure, for it looks as if there is going to be in the future more enforced leisure for the average man as technological unemployment increases. So we are brought back again to the old idea of the importance of educating for leisure. And it seems better that people should read almost anything than not read at all.

Of course, we, as schoolmasters, are interested in the question, Can people be led to read better things? I think they can, in two ways, at least. First, we can select in the schools those better endowed minds, capable of sustained intellectual effort, and guide them to the better kinds of reading. It is a sound theory of education that every boy and girl in the land should have a chance at the best of which he is capable. This is an ideal to which we all subscribe. This is one of the things we are trying to do. Second, we can try not only to discover and develop the gifted pupils, but also to raise the general level of all. Although we long ago lost that beautiful, simple, eighteenth-century Jeffersonian belief in the fundamental equality of everybody, we still believe that all pupils can be lifted, each in his degree, to a higher level.

How are the schools working toward these ideals? In the first place, the old narrow program of reading in the schools has been immensely widened. In place of a dozen books in the English

course, all required, we have now an optional list of from fifty to a hundred books from which to choose. The old controversy over the narrowness of the college-entrance requirements in English, that once divided the East and West, is now mainly a matter of history. The English readings have been changed and broadened to include many titles that are not belles-lettres, taking in science, history, and general information. In taking account of the interests of pupils we have discovered more interests among them than we had suspected.

This democratic broadening of the course has proved to be psychologically sound. Pupils have responded well to the liberality of the theory that one should be given the food he likes and can digest. If there are people who will not read Shelley, they may like Longfellow; if they will not read Longfellow, let them read Edgar Guest; if they will not read Edgar Guest, let them read the best they can. I do not go so far as to advise an English course made up of the popular magazines; but I do say, have in your school course enough of the simple things so that the simple minds of those unable to carry along with the rest can get something, too. In this broader conception of the English work, the co-operation of the public libraries has been of the greatest service. It has been cheerful and efficient. Of all our public servants, the librarians seem to me the most intelligent, kindliest, most co-operative.

Coming now to what I might call my educational creed, I wish to suggest some fundamentals for the school course in literature, and for the teaching of it. First, include in the course, by all means, a considerable amount of that common stuff which everybody should know because everybody knows it, and which everybody knows because it is so good that everybody should know it. Is that too involved to follow? Such literature is universal because people keep on reading it and pass it on to others. That is the way a classic is established as a classic. This sharing in a common literature, this knowing the same thing that others know, has a high social importance. To respond to the same sentiments, to react to the same stimuli, tends to unite a people. It is one of the ways to build a nation. We talk about "socializing" the schools. There is no better way of socializing any group than to have them know and enjoy and feel the same way about the same things. There is an old story that illustrates this. Two Englishmen were caught under an awning in a shower. One of them took out his watch, looked at it, and noted that it was not running. He shook it and held it up to his ear. The other one looked at him, caught his eye, and said, "I told you butter would not suit the works;" and the other one said, "And

it was the very best butter, too." It was an introduction; they began to talk; for they knew their *Alice.*

I have no intention of giving here a list of these universal things. I mean such things as *Mother Goose* and Grimm and Aesop, Longfellow and Dickens, *Robinson Crusoe,* and, of course, the Bible—it is a very great pity that we do not have as much reading of the Bible as in former days. *Alice in Wonderland* and a good deal of other witty nonsense ought to be included in the list. If I were to attempt to make out a catalogue of these things which I thought should be and are universal, I do not know how many titles I should have; but I know the list would pass the hundred mark.

Turning now to the question of method, what can we do in teaching pupils how to read? I begin with what I hold as the second principle in my creed: Help pupils always to go after the essential or central idea, mood, meaning, application, whatever it is, of every piece of literature they read. The central idea may, or may not, be didactic. There may, or may not, be a moral. Some of the very great literature you cannot "moralize." If you tried to do it you would feel yourself ridiculous. Try, for example, to "moralize" *Othello.* Was it jealousy? Was it to warn ladies not to lose their handkerchiefs? What meaning has it, anyhow? Yet it is one of the great masterpieces whose obvious object is to stir our emotions profoundly. *Robinson Crusoe* is easy to grasp intellectually. You can see what thrills you there, the spectacle of a solitary man fighting against nature to save his life and his reason. Edna Ferber's *So Big* has a perfectly definite idea. It pictures a young woman whose life is given to hard, unremitting toil. But the work is idealized and beautified by the thought that she is feeding hundreds of families in Chicago; and that inner vision of a useful work makes her life beautiful. In her old age this woman with the wrinkled face and scarred hands has a light in her eyes, as of one who has found the common things of life beautiful.

Reading so, one is led into the author's theory of life. Those who think of Sinclair Lewis only as the bad boy throwing mud at the kind of town in which he grew up ought to read that short story in which he tells about the old retired Swedish farmer who goes to college and fails to get the beauty and the light he had hoped to find there. Such a way of reading tends to bring their messages closer to life and to our thinking about the meaning of things in this puzzling world. In this sense literature becomes what Matthew Arnold called a "criticism of life." I repeat, the great thing, the first thing in all reading of literature is to sense what effect the author has tried to get, whether to convey an idea or an emotion.

A third matter of vital importance is the building of backgrounds. Without these, many things in books are meaningless. I quote here an example from one of the essays of Charles Brooks, whose delightful writing about literature and things in general I hope you know.

"I am for England, there—for its winding roads, its villages that nest along the streams, its peaked bridges with salmon jumping at the weir, its thatched cottages and flowering hedges.

"The chaffinch sings on the orchard bough
In England—now!"

I wish to see reapers at work in Surrey fields, to stride over the windy top of Devon, to cross Wiltshire when wind and rain and mist have brought the Druids back to Stonehenge. At a crossroad Stratford is ten miles off. Raglan's ancient towers peep from a wooded hill. Tintern or Glastonbury can be gained by night. Are not these names sweet upon the tongue? And I wish a black-timbered inn in which to end the day—with polished brasses in the tap and the smell of the musty centuries upon the stairs.

At the window of our room the Cathedral spire rises above the roofs. There is no trolley-car or creaking of any wheel, and on the pavement we hear only the fall of feet in endless pattern. Day weaves a hurrying mesh, but this is the quiet fabric of the night.

I wish to walk from London to Inverness, to climb the ghostly ramparts of Macbeth's castle, to hear the shrill cry of Duncan's murder in the night, to watch for witches on the stormy moor. I shall sit on the bench where Johnson sat with Boswell on his journey to the Hebrides. I shall see the wizard of the North, lame of foot, walking in the shade of ruined Dryburgh. With drunken Tam, I shall behold in Allaway Kirk warlocks in a dance. From the gloomy house of Shaws and its broken tower David Balfour runs in flight across the heather. Culloden echoes with the defeat of an outlaw prince. The stairs of Holyrood drip with Rizzio's blood. But also, I wish to follow the Devon lanes, to rest in villages on the coast at the fall of day when fishermen wind their nets, to dream of Arthur and his court on the rocks beyond Tintagel. Merlin lies in Wales with his dusty garments pulled about him, and his magic sleeps. But there is wind tonight in the noisy caverns of the sea, and Spanish pirates dripping with the slime of a watery grave, bury their treasure when the fog lies thick.

Thousands of years have peopled these English villages. Their pavements echo with the tread of kings and poets. Here is a sunny bower for lovers when the world was young. Bishops of the Roman Church—Saint Thomas, himself, in his robes pontifical has walked through these broken cloisters. Here is the altar where he knelt at prayer when his assassins came. From that tower Mary of Scotland looked vainly for assistance to gallop from the north.

Here stretches the Pilgrims' way across the downs of Surrey—worn and scratched by pious feet. From the west they came to Canterbury. The wind stirs the far-off traffic, and the mist covers the hills as with an ancient memory.

How many thirsty elbows have rubbed this table in the forgotten years! How many feasts have come streaming from the kitchen when the London coach was in! That pewter cup, maybe, offered its eager pledge when the news of Agincourt was blown from France. Up that stairway Tom Jones reeled with sparkling canary at his belt. These cobbles clacked in the Pretender's flight. Here is the chair where Falstaff sat when he cried out that the sack was spoiled with villainous lime. That signboard creaked in the tempest that shattered the Armada.

Such backgrounds as are here revealed mean education. The principle implied lies at the root of all education; the building for every human being of a bigger and fuller world for him to live in, bigger geographically, bigger historically, bigger imaginatively, bigger socially. Unless our world has been enlarged our education has done nothing for us. We are not educated.

The question whether literature can be taught is an old one. As a teacher I am, of course, very unwilling to believe that we are not teaching it. I believe you can show to others something in books that they have not seen for themselves, something they are glad to see. I have tried such experiments with young people. I recall my experiences, for example, with a small boy, who was playing a phonograph record of selections from "The Show Boat."

"Did you notice the whistle of the boat?" I asked. He played it again.

"Oh, there it is," he said, chuckling. He had also a record of a negro spiritual, the accompaniment of which was ingeniously written to give the effect of a wheel running underneath the melody. At a hint, he got this, too, and liked it. This is a sort of thing you can do in music and art and literature. Let us take an illustration. Here is a beautiful poem by Joseph Campbell:

As a white candle
  In a holy place,
So is the beauty
  Of an agèd face.

As the spent radiance
  Of the winter sun,
So is a woman
  With her travail done.

Her brood gone from her,
  And her thoughts as still
As the waters
  Under a ruined mill.

It is a touching and beautiful thing. "The white candle in a holy

place" is a fitting simile to suggest that reverence for fine old age which the normal person feels. "The spent radiance of the winter sun" suggests that from the summer sun powerful, brilliant, warm, the fire has now gone out. If you have seen it you can recall the placid look of the water under the old mill race, where once was whirling activity; and again you feel the perfect fitness of the comparison. Here is another poem about an old woman, written by Agnes Lee:

Mrs. Malooly has gone to her rest,
Who scrubbed Manhattan's marble aisles
She has forgotten, forgotten, forgotten
The mop and broom
And the patterned tiles.

Mrs. Malooly has gone to her rest
In the smooth-dug loam, to a rest so deep
She has forgotten, forgotten, forgotten
The unmade bed
And the whiskey sleep.

The rhythm perfectly suggests the movements and sounds of her daily drudgery, and the whole poem gives with a poignant power the limitations of her life.

Here is a beautiful thing by Sara Teasdale:

Let it be forgotten, as a flower is forgotten,
  Forgotten as a fire that once was singing gold,
Let it be forgotten for ever and ever,
  Time is a kind friend, he will make us old.

If any one asks, say it was forgotten
  Long and long ago,
As a flower, as a fire, as a hushed footfall
  In a long forgotten snow.

The repetition of "forgotten" and the perfect comparison of an old love first to a flower, and then to a fire that once was singing gold, with its suggestions of beauty and human fellowship; these are things that a reader may not see for himself, but can hardly fail to see when they are pointed out. That is a large part of our work as teachers.

Sometimes our task is not pointing out the things that we wish the pupils to see, but making them clear by bringing other and illuminating things to bear on them. I should like to offer an illustration. A class in college, reading nineteenth-century literature, had come to Scott's "Proud Maisie." One student looked up and said quite innocently, "I don't see anything wonderful in that." It

was a challenge that had to be met. The teacher read the poem through and said, "Is the thought of death solemn?"

"Yes."

"Is the thought of the death of the young and beautiful more solemn?"

"Yes."

"Has this idea been expressed elsewhere in poetry?"

Then followed from teacher and students four or five citations of this idea in poetry—from Gray's "Elegy," Shakespeare's elegy in "Cymbeline," Browning's "Toccota of Galuppi," and other sources. The doubting student said simply and seriously, "I see." It was a good instance of the effect of cumulative impressions.

I will give yet another example, the poem called "Wild Plum" by Orrick Johns:

They are unholy who are born
To love wild plum at night,
Who once have passed it on a road
Glimmering and white.

It is as though the darkness had
Speech of silver words,
Or as though a cloud of stars
Perched like ghostly birds.

They are unpitied from their birth
And homeless in men's sight,
Who love, better than the earth,
Wild plum at night.

My first reading of this poem left me a bit puzzled. I wondered if there were any legend about the wild plum, any folklore that explained the meaning. I could not think of any. I asked others and could not learn of any. Then I thought of "The Raggle Taggle Gypsies," and I had my answer.

The teacher's function, in brief, and in conclusion, seems to me to be very closely comparable to the function of the literary critic. For the purpose of the literary critic is not only to judge, to rate, and to grade pieces of literature; it is also to help others see in literature what he sees there. The critic's work is not only to say whether the literature is good, but also to help the reader to understand what it means, what the author is trying to say, and where he has said it effectively and beautifully; to help the reader to understand and appreciate. These also are the tasks of the teacher.

Like all teachers of literature, I read the journals devoted to the criticism of contemporary literature. And I am much impressed with the degree to which the literary criticism is interpretative rather

than judicial. I do not mean that judgment is eliminated; but the dominant interest in contemporary criticism seems to be to explain even more than to judge. So is our work in teaching: primarily interpretative, then judicial.

I should, of course, never hesitate to tell a class in high school or college if I thought a piece of literature in the course of study was not good. We ought to be judicial. We ought to be well educated on sound literature. If we call everything good our judgment is discredited. But, I repeat, the judicial is not our main function. Our work is to help pupils, our John Does of the schools, find out what sort of thing this literature is, what it is all about.

Editor's Note.—Permission has been granted by the Macmillan Company to print "Let It Be Forgotten" by Sara Teasdale, quoted from *Flame and Shadow*.

Some Great Geographical Problems

By MARK JEFFERSON[1]

GEOGRAPHY IS, OF COURSE, ABOUT MAN on the earth, not the earth and man, but man on the earth. And the problems are to find out where this man is and what he is like. When we know that, we shall know a lot; the whole story of civilization is hidden in that. Our naturalist president, Theodore Roosevelt, went to Africa, and hunted ostriches there. He found them hard to catch for he could not get near enough to them. After chasing a lot of ostriches Mr. Roosevelt asked his black man if he had ever heard of a habit that ostriches have of sticking their heads in the sand when they are chased. The black man admitted that he had not. And then you will remember Mr. Roosevelt commented that the black man and the African ostriches had not had the advantage of an American public-school education; nevertheless, I wonder if anything is more widely and effectively taught, not merely in the American public schools, but in the schools of the world, than that an ostrich, when chased, hides his head in the sand. You will recall Stefansson's comment on Roosevelt's words.

> The surprising thing to me about this is that I should have needed Mr. Roosevelt to find this out. If anybody had ever stopped to think, he would see that a very bad way for ostriches to survive in this world would be to hide their heads in the sand when something dangerous chased them.

We have many things like that which should be eliminated from our fund of knowledge. We need to find out more of these things that are not so, and eliminate them from our teaching of geography. It is singular how false doctrine spreads. The teachers teach so well that it is impossible to forget what they teach.

We have a notion—I believe it is in our dictionaries—that the French phrase for the name of the author of a book, when he has not used his real one, is *nom de plume*. Those of you who speak French know that this is unknown in France. I was one time near Paris talking with the late George Chisholm and several professors from French universities. We had raised the question of this French phrase and agreed to leave it to the professors of the University of

[1] Michigan State Normal College.

Paris, who were right there. We put the matter to them: "Suppose I write a book and I do not want to put my own name on the title page, but use another name. What do you call that name?" They gave us *pseudonym* and *nom de guerre*, but could mention no others. We finally suggested *nom de plume*, but none of them had ever heard of it!

The same thing is true of our word *sombrero*. Everybody, of course, knows that a sombrero is a wide-brimmed Mexican hat. This is supposed to be a Spanish word, but as you are well aware *sombrero* in Spanish does not mean that kind of hat at all, but any kind of hat. Derby is *sombrero de copa*; lady's hat is *sombrero de señora*; straw hat is *sombrero de paja*.

Whenever we teach what is untrue, however widely believed, time is not merely wasted, but damage is done. I wonder if it is not true that in less well-prepared schoolrooms than yours we have the good old story about the warm winds from the Pacific Ocean that sweep against the snow-clad mountains, and are cooled by the snow on the summits so that the winds throw down their water vapor in the form of rain and snow. Of course, if anybody thought of it, he would realize that in a few years, to say nothing of the centuries that have passed, it would be necessary for the iceman to come and put some more snow on those mountains. The only thing wrong with the explanation is that it is ridiculous and will not work. We should understand such things, and we should have long ago substituted something else for that story.

Well, geography is about countries, and its problem is to know what a country is. You know that hymn we sing, which the little boy said was "My Country Teazle-ee." If you look into that hymn you find out something about our country. It is made of rocks, rills, woods, and mountains. That is not my country at all. There are just as good rocks in Europe as there are in the United States. I have seen some rocks around Rio de Janeiro that are just as good as they are here. The thing that makes our country a thing to be fought for, to be admired, to be loved, is the people in it, past and present. And the people do not get any mention in those verses. I think some geographer who has the gift of verse should write a new anthem with our countrymen in it. Now, briefly, a country is a nation plus its territory. That is so brief that it does not sound like anything at all. But hidden behind it there is really a lot of meaning. I will add this much before I go on, that this nation is something imaginary; that is, it is a spiritual something.

You have heard of the War of 1812. I learned from the *Atlantic Monthly* for April that the English are not aware that there was any

War of 1812. They were worsted, you know. Also, Kenneth Roberts stated in a recent *Saturday Evening Post* that the most remarkable thing about the War of 1812 was that then for the first time did the people of the United States come to a feeling of unity; and the hinge on which that statement was hung was the fact that an American sailor in an English prison got mad at an Englishman, and gave him a black eye, because he spoke slightingly of John Paul Jones. Up to this time, the author asserted, the American people had been a lot of squabbling sectionalists, the North squabbling with the Middle, and the Middle with the South. But in 1812 the feeling of unity was born, and the American people began to think of themselves as a nation.

This *nation* is a spiritual thing. Once let people get this sense of nationality, this sense that they belong together, this feeling that I do not want a Georgia man spoken ill of although I hail from Boston, and a Georgian does not care to hear a European run down a Bostonian, then we are a nation. You see a nation is, like Massachusetts, a state of mind. The country, however, is a material thing. It is the nation together with its territory. I want to leave that little sentence with you, and hope that you will remember it.

It is interesting to think of taking the French nation and putting it down in British territory, and of taking the British nation and putting it down in French territory. France is the French nation in the French territory, and that French territory fits a Frenchman. Why does it fit him? He has been fitting it to his needs and wishes for a long while. And the British territory fits John Bull because he has been fitting it a long while. If we switched those two nations from their homes each into the territory of the other, what an awful misfit there would be! There would be a new France. And let us think what that amounts to.

Was there ever a New France in the world? As you read history did you ever come across a New France? Of course, you did. Where was it? It was in America. And you realize that here a bit of the French nation had been taken from its old territory and put down in a territory that was not French. Then a New France was born. What an entirely different thing from France is Canada, and from Old England is New England! A country is people, first and foremost, but people together with territory that they have made their own. Sometimes you see how an actual nation, shifted in place, has to undergo changes in fitting its environment to itself, in fitting itself to its new environment.

The first topic that I have to offer in getting down to cases is that we are Europeans. That may shock you. But on the national,

spiritual side you know we are Europeans, Europeans shifted out of Europe. I am going to give you a look at the world of 1775 and the world of 1925 from this point of view of Europeanization, and ask you if they do not show a correct chart of our civilization. After I had begun to study civilization and had published various little studies, trying to find out something more about our civilization, a Swedish geographer pointed out, much to my astonishment, that my civilization was nothing but Europeanization.

What I mean by saying we are all Europeans comes out at once if you think of so concrete a case as transportation. How do we get around? Once upon a time we got around with a horse or with a horse and buggy. Where did we get the horse? From Europe. There were none here. And the buggy? That, too, came from Europe. There was no use for a buggy when there was no horse. Horsemen like our cowboys of the West, with their roping, came with the horse. They lead the world now, but it is only European horsemanship carried a little further.

Early in his career Henry Ford was making racing cars. He wanted to make them strong and light. They needed to be stronger and lighter than ordinary passenger cars. A French car happened to be smashed up, and he picked up a part that was always breaking in his cars. It had not been broken. It was a piece which in American machines would have always gone to pieces. It was a slender piece just about finger-size. He had it analyzed and found that the material out of which it was made was vanadium steel. Henry Ford boasts that he does not employ experts in his factory, that if he needs anything, his men just make it. But he had to send to Europe to find out about vanadium steel, because nobody in America knew about it. Vanadium steel is ever so much stronger than other steel; and strong, slender parts for an automobile can be made from it. Everybody uses it now, but we had to get it over there.

We have still newer means of locomotion by air. Where did we get them? The brothers Wright invented the airplane down here at Dayton, but they practiced quite a bit with gliders before they put engines in them and made them go. The gliders came from Europe. We are taking the civilization of Europe, and we are pushing it ahead as far as we can. A German scholar has said:

> The thing that is annoying some European nations at the present time is that they are just discovering that the Americans have taken European ideas and carried them faster and further than Europeans have as yet, and they are peeved about it, because they were going to do it by and by. . . .

Imagine that I had inserted opposite this page a map of the world in 1775 on which Europe, the thirteen original colonies of the United

States, and a little tip at the Cape of Good Hope were all black to indicate that the people were Europeans living either in Europe or in a new home out of Europe. Also, imagine that the places that were under European control in 1775—substantially the West Indies and certain places in tropical America—were shaded with black lines. In the places where there were lines some other races of people lived under the control or the management of Europeans. The middle of Africa, all of Australia, almost all of Asia were quite non-European and independent of Europe in 1775.

Now suppose a map is inserted showing the countries in which Europeans predominate today. The European people are in Europe, all over the United States and Canada, in some parts of Mexico and Cuba, in the so-called temperate parts of South America and along the east coast of the Tropics, about the Cape of Good Hope, and everywhere that people can live in Australia and New Zealand. The line-shaded territory, the places that Europe controls, are practically the same as they were with the addition that now almost all of Africa and the East Indies are under European control. On this map there are countries marked by black dots—countries where the people have learned to follow the example of Europe. The country of most importance is Japan, which has been Europeanized, not by force, but by her own will. Siam and the Philippine Islands are marked with dots, but they are not good cases, for force has been used to urge them to put on European ways. Turkey, with the inspiration of European ideas, has put on European clothes and uncovered the faces of the women—some of them are good-looking, and it was intolerable for them to keep all covered up.

There is something new in this idea of a world of four groups of people. The simple, old-fashioned conception of the world was that it was divided into six continents. Mr. Davis used to tell me that nobody knew what a continent was. The word seems to mean some land that holds together. Australia was a continent then, and South America and North America, pretty nearly broken off in the middle, Africa was pretty nearly broken off. So there were six continents.

I am asking you to entertain a new thought, that there is an expanded Europe. On my imaginary map Europe is the total of countries that are Europeanized. It covers Europe, Canada, the United States, and other parts of North America, South America, Australia, and the Cape Colony; something like it exists in Japan.

Then there are three other continents. There is tropical America with the people mainly Indians—Indian America, therefore. Then there are the interior parts of Africa, which we might say was

African Africa, and the northern parts which are European Africa. Most of Asia is still Asiatic.

One item of this Europeanization that has been going on in the world is the provision of a remarkable means of transportation, the railroad, and its effect in the world. Suppose that bands of white were drawn to indicate each railroad on the blackened map of Europe. These white railway bands in the western part of the continent, England, France, Holland, Belgium, Germany, Czecho-Slovakia, Hungary, most of Austria and Switzerland would run together making these sections all white. Suppose we call this white mass of West Europe a "rail-web." When you take a lot of threads and weave them together so that the individual threads disappear, we say we have made a web. Such is the white mass of Western Europe, so close are the railways together.

In that representation of railway transportation in Europe about 1925, the black and white rail-net suddenly and sharply disappears at the boundary of the Iberian Peninsula, and at the edge of Russia it gives way to a net of white bands on a black background. Ours is a modern map, for Czecho-Slovakia and Poland and other countries which are new since the war are indicated.

What is the point? The Russians had an experience with Napoleon bringing hordes of enemies into their country a hundred years ago. And when the railroad was constructed in Russia, it occurred to the people in power that there was one class of persons whose entry into Russian they did not want to facilitate, and that was the soldier of West Europe. So they said, if we have any railroad in Russia, it must be of a different gauge from any other railroad, so that when trainloads of soldiers come to Russia, they will have to get out and walk; so the railroads have a five-foot gauge in Russia and a four-foot-eight gauge in the rest of Europe. As a matter of fact, the Germans provided all of their freight cars that were to carry horses and men with an adaptable axle, which enabled them to shift the wheels when they got to the Russian frontier. They stopped five minutes, there was a click-clack of tools, and they went on as before.

In Spain, the same thing happened. Spain, too, suffered at the hands of Napoleon. He came in, seized the king and enthroned his own brother. The Spaniards remember the heroism they showed in driving out Napoleon. They do not remember that Sir Arthur Wellesley was there with some British troops and helped them. But when it was proposed to put railroad trains in Spain, the same idea occurred to them, and Spain has a five-foot gauge. You take a train from Paris to Madrid; when you get to the frontier you have to get

out and walk to take another train. That is an inconvenient thing for the Spaniards, and tourists are deterred from coming to Spain by reason of it. Fear and backwardness have necessitated this sort of restriction.

We have a splendid rail-web system in the eastern part of the United States, but in the west, following a line which shows where the rainfall is not sufficient, the rails are not so close. There is not the white rail-web; it is too arid and here is a rail-net of white bands on black just as the Spaniards have.

In South America a little rail-web is found on the Pampas and some connections up to San Paulo and Rio de Janeiro. These are the only three rail-webs on the continent. Let me call attention to this Chilean line. That long shoestring of a country, three thousand miles long and one hundred miles wide more or less, a ragged, irregular shoestring, seems to have a beautiful line from one end to the other, a line of railroad. But in Santiago, if you try to buy a ticket to the end of the line, they will say, "We only sell tickets through during the month of January." That is the tourist season, when it does not rain so much. At other times, you have to buy your ticket for two hundred miles, and then buy another. North of Santiago you could not buy a through ticket anyway. You could only buy it up fifty miles or so. The transportation is mostly by sea. When the ship comes to the land, all that is needed to transport the goods is a little tentacle of railroad, leading into the interior. There are a great many of these little tentacles from the seaport on the coast into the interior, which carry the bulk of traffic. These lines have been joined, but there is almost no traffic parallel to the coast.

It is the same way with the railroad from Buenos Aires to Rio de Janeiro. I made the first trip in 1918, when it was completed. The ticket had to be bought from a sort of South American Cook's Tourist Company. It consisted of a book of orders or coupons. When I came to a steamship company, they tore out a page and gave me their ticket. When I came to a railway company they tore out a page and gave me their ticket. And there were 40 miles on the Rio Negro in Central Brazil where we were to travel by boat. But when we got to the station, we were told we could go through all of the way, as the rails were finished. At Rio Negro there was the boat that we would have taken, with a tarpaulin over it, and a bystander said that the tarpaulin was over it for good; it would lie there until it rotted. River transportation is a pretty good thing when there is nothing better. That is what we Americans found out long ago. Some people still think they can make it come back. Maybe they can, but rails will still be the important means of transportation.

Turning to Europeanized Africa we find a little rail-web in the north and a little rail-web in the south, but in the interior there are no rails, while in Australia wherever the white man can live, you find a well-developed rail-net.

The story is different when we turn to the continent of Asia. Asia has two rather striking rail-nets. One is in Japan, where the Europeanization is by imitation. The Japanese found out they could not fight Europeans. They said, "We will have to learn these European tricks." Now, they know how the Europeans fight, and they learned a lot of other tricks. They have a real rail-net that they built for themselves.

There is a remarkable rail-net in India. And in these times of the stirring of the sentiment of national unity in India, it is important to have a picture of the contribution made by the English to the dwellers there. Under the old Indian arrangements thousands died of starvation every time the rainfall was insufficient. When you come to think of it, a hundred years ago or more all of the world was in a situation to appreciate what Thanksgiving meant. We have Thanksgiving still and the President issues a proclamation, but what a long way we are from the people who invented Thanksgiving. What they were grateful about was good harvests. It was the season for the gathering in of the crops, and they were thanking God because he was pleased to give them bountiful crops. Nowadays a bumper crop means ruin for the farmer, unless everybody else has failed to have a bumper crop, for prices will be low. Famines have been abolished from the world by railroads. We had a bad season last summer, if there was ever one in the world, and because of the drought the people in this country did not raise their food in their own fields as they were accustomed to do. Did people die of starvation? There was hardship. There was suffering. But you know how busy the rails were, how effective they were, and if in any section people were without food, food was taken to them.

You hear very much about the hard times we are having, but did the world ever see anything like the united effort that has been put forth to remedy these hard times? What a splendid thing it is! You cannot tell in this country and many other countries that there is lack of food before the wheels begin to turn somewhere to send food where it is needed.

We used to be told before the war about the marvels of mobilization of the German army. Whenever the general-in-chief decided to mobilize the army, all that he had to do was to press a button and then go to sleep for two weeks. Everything would go ahead, and

he would wake up and find his army mobilized. It was a bad thing for the Germans that they believed that they could do that.

More marvelous it seems to me is the wonderful organization of the British in India by which, when the monsoon rains fail, food is taken to the people because they are a backward people and must depend on the land about them. When the monsoon rains are not sufficient, England presses a button, and civilians, not soldiers, immediately get busy loading trains to take food to the hungry. That empire of Britain, with those rails, has made a famine in India everywhere impossible. It is symbolic of the practical things that John Bull can do, and that no group of Indian people can do or think of doing. That shows the vast gap between Indian aspirations and British accomplishments.

Japan said, "We are a great people. We deserve the best there is. We have to get these things." And they certainly stand foremost among the nations of the world as patriots of that type. There is a Japanese nation. There is that spiritual thing, one Jap and another Jap, and all tied together. But there is this material thing, the Japanese Empire, the nation together with Japanese territory that it uses in modern ways.

Near by is China, with about as many people as there are in India, but how meager is their provision of rails. The people of China have not seen any light at all. How little is their accomplishment! In China it is still possible for people to die of starvation within five or six hundred miles of plenty, because the European means of transportation, the railway, does not exist. The Chinese cannot build railways for themselves. They do not even keep up the few Europeans have built there. Some of their railroads are tied up to those of Japan, and Japan not only is capable of building railroads all over China, but she would love to do it, if she were allowed.

There is Russia, too, connected by rail with China. Imperial Russia would have loved to supply the Chinese with rails. Soviet Russia, too, perhaps, but she is not capable of doing it. She cannot keep up her own rails.

At the present day there are four great countries in Asia. There is the subject land of India that is being taught lessons of how to utilize effectively the resources of nature for the benefit of men. Englishmen are doing it in the presence of Indians, and the Indians should learn to roll up their sleeves and do such things themselves. Second, there are the Japanese who have never had masters come in to tell them, but they got the idea and have made for themselves an

excellent system of transportation. Third, there are the unhappy Chinese, unable even to develop a feeling of national unity, unable to build themselves any railways. Now, let us look at a fourth nation, Afghanistan, north of India—a little space of the map of Asia between Persia, Siberia, and India. Russia has railroads built right up to the Afghan frontier and there they stop. The British on the south have two lines built right up to the Afghan frontier and there they stop. All these lines seem to be on tiptoe waiting for somebody to discharge a pistol, and they will start building their railroads to Kabul and Kandahar. The question would be whether the Lion or Bear would get there first. Then came along that picturesque Ameer of Afghanistan, Amanullah Khan, who saw the light of modern ways, who was buying thirty trunks full of French dresses for his wife, no veils included, and he had thirty automobiles in his train. He wished to build roads. We can imagine that he would have opened up the country by railways. Here we come to the nature of civilization. It appears that Afghan is not civilized. The old folks said, "These are new things; we do not do new things here." And Amanullah lost his kingdom. It is one of the peculiar characteristics of civilization, that a land is civilized when the old folks can learn from the young. It is barbarous if the old can learn nothing new.

We have in this country the experience of the Carlisle Indian school, with the theory that they should take the young Indians into the school and teach them to use soap and water and toothbrushes and clothes. Then when they were graduated, they would go home and teach the old folks to use them too. What happened? They went home, and the old people said, "No such foolishness around here." And the Carlisle graduates became blanket Indians like the old folks.

That is not true with us, for our older people are ready to adopt anything new under the sun. A few years ago a young lady came home from college with a skirt so short her ankles showed. Her mother said, "You go to your room and take that thing off and put on a proper dress." Now look at mother, with her knees in the air. A little while ago we men were using detachable cuffs. Our sons began to wear cuffs that were made on the shirt. They taught us to put them on; now we men are wearing cuffs like the boys. Because we are a civilized race, the old people can learn. The young have some good ideas, and when they have a really good one, this being a civilized land, we old folks can appreciate it and adopt it. And there lies progress.

The Japanese have put on modern civilization because they

believed in it. The people of India have had some works of civilization done for them by the English. The Chinese are unable to make up their minds or really to decide what they want, while Afghans will have nothing of civilization. They are a barbarous people and are minded to continue barbarous.

The Japanese are a nation with the feeling of national unity. Japan is a real country, a nation together with territory which it uses, and uses in modern ways.

China and India are not nations. They have no sense of national unity. The Chinese cannot communicate with each other at all. They squabble. Only a few Indians can communicate with each other, and they have to use the language of their conquerors to do it. China is no country; it is anarchy. India is only a subject country; its only national unity is the dominance and work of England. Afghanistan, however, is a true country though a barbarous one where the old will not learn new things. But the Afghans are a nation. They feel a national unity, and this nation uses a national territory in its old-fashioned but national way. A country is a nation together with the territory upon which the citizens make their livelihood.

Graphical Methods in Geography

By GUY–HAROLD SMITH[2]

GEOGRAPHY IS PARTICULARLY SUSCEPTIBLE to graphical treatment, so that the map has come to be the symbol of the profession. From the time of the invention of the map down to the present, maps, so far as they were available, have been the guides of explorers. In turn, the explorers have had as one of their objectives the extension of geographical knowledge, and the improvement of the maps of the known world. The map is not yet complete, but we have gone far toward erasing the dark places from the earth.

Elaborating the map, as well as extending it, has become a primary objective; engineers, geologists, and geographers are today engaged in the great task of filling in the vacant spaces. The precise mapping of the minutiae of landscape and culture has become an essential correlative of genuine geographic research.

Modern geography, which deals with the physical phenomena of the atmosphere, as well as those of the surface of the earth, has taken over some of the graphical devices of meteorology and climatology. The tendency to consider the human aspects of geography has led

[2] Ohio State University.

the geographers into the related social sciences, with the result that they have come to use some of the statistical and graphical methods which are common property of all of the humanities. I refer particularly to the cartograms, graphs of various kinds, dot maps, and other two-dimensional fields on which are displayed graphically all kinds of statistical data. These devices are the tools of the scholar, but some of them are commonly used by the student and the teacher.

Map sketching, one of the fascinating devices, is commonly neglected, partly because a poor map is worse than no map at all, and partly because the busy teacher has little time to devote to drawing original sketches and maps and still less to criticize and instruct the students. The printed outline map, because it is so inexpensive and because it presents the outlines of areas as nearly correctly as any map does, gives the teacher an opportunity to speed up the learning process.

Landscape sketching, however, is a helpful device, and the skillful teacher can do much toward simplifying the textual materials. In many ways the sketch maps "in plan" show features which cannot be seen in the field. The photograph, so commonly used to show characteristic landscapes, may be unsatisfactory, for vegetation may obscure the land features. Yet carefully selected photographs will assist materially in teaching the students the characteristic features of the physical landscape.

Students are coming into the geography classes of the universities, and I fear they are leaving also, without having acquired a systematic knowledge of their physical habitat. If our high-school and university teaching could be enriched by the use of graphical materials such as are now available, supplemented by the skillful use of sketch maps, I am sure that our students will be better prepared to understand the environment in which they dwell and the forces which affect it.

One-Cycle or Two-Cycle Geography

By HELEN M. KOPF[3]

In no other subject of the curriculum have there been such sweeping changes in content and in methods of presentation as in geography. Today teachers are questioning whether or not a one-cycle or a two-cycle presentation of geographical material affords the greater opportunity for individual guidance. For many years geography has been taught chiefly in the two-cycle series. The

[3] Piqua public schools.

whole field has been covered in a brief course in the fourth and fifth grades, and then a repetition with greater detail of world geography has followed in the sixth and later grades.

At present there is a group who affirm that only one cycle of world geography need be studied, and that this should be done thoroughly without any expectation of returning to it again. They maintain that the best single guaranty of a good approach to real learning in any field is found in a deep, direct interest on the part of the student arising from his first contact with it. They also would adapt the subject-matter to the age of the children, beginning with regions where people are yet living simple, primitive lives. The interesting details of people's dependence on natural environment proves fascinating to primary children. This is impossible where the two-cycle series is used, because only broad general outlines are given in the first course and this fails to generate interest and enthusiasm. It is the concrete, the personal details that arouse interest. In going over the field twice there is no time, even if there were the disposition, to delve into the details of how people's lives have been influenced by climates, soils, winds, ocean currents, and other physical conditions.

The two-cycle plan came into popular use years ago when the mass of children never advanced farther than the fifth grade. It did seem advisable then to present a complete course of world geography before children left school, but this is unnecessary today as few children leave school before completing the seventh grade.

Any scientific deductions as to the relative merits of the two plans are difficult to make. One question that can be answered is the relative amount of material presented in a one-cycle and a two-cycle course. A representative one-cycle series of four books contains 798 pages of material, while a popular two-cycle series of two books contains 712 pages. The table of contents in the one-cycle series listed 2,631 topics or geographical terms; in the two-cycle series were 3,464 topics, but of these 863 were a repetition in the second book, so that there were only 2,601 different topics. Only slight repetition was found in the one-cycle books. From this we may conclude that in neither the one- or two-cycle series do we find an unusual numerical strength in factual material.

A more worth-while investigation was to determine the achievement abilities of children taking the one-cycle course as contrasted with those taking the two-cycle course. We have in the classes of fifth-grade pupils at Piqua, children who have covered, in the single-cycle course, the same material that the advanced sixth-grade pupils have had in the fourth and sixth grades in a two-cycle series. We prepared a list of questions pertaining to this material, and gave them

to all our advanced fifth- and advanced sixth-grade classes. The results of these tests show that the median for each grade is the same, but that the upper quartile of Grade V–A made higher scores than did the upper quartile of Grade VI–A. This would indicate that in the matter of factual geographical knowledge one-cycle students are as well informed as are those who have taken the subject twice; and that the brighter students benefit less by the repetition of the two-cycle course than do the slower pupils.

The Specialist as a Co-ordinator of Guidance

By PHILIP W. L. COX[1]

THE INFLUX OF CHILDREN INTO OUR SECONDARY SCHOOLS and colleges has been likened to a great migration—a vertical migration and a time migration. Democracy is groping upward as it moves forward. It seeks opportunity to expand narrow lives, to free them from inferiority complexes, fears, and jealousies. It makes the entire generation of adolescents an economic leisure class.

If you ask that interesting chap called "the man in the street," what our greatest national achievement is, he may tell you it is in the automobile industry, or in the steel industry, or in aeronautics. It is in reality in none of these. Our greatest national achievement is not in medicine nor chemistry nor electricity. It is in education. Here is something which captivates the imagination—would if it were not as a matter of fact taken for granted—here is an undertaking which ministers directly to one-fifth of the entire population. It has its officers and executives not only in every city but at every crossroad. Its holdings are a principality.[2]

Our schools have in few instances been prepared in advance to meet the almost overwhelming problem which the great migration has brought to them. In the past, they have been dominated by little wizened souls who talked of "standards" and "culture" and "training leaders," following the European stereotype. They have alternately scolded and almost wept as the barbarian hordes, with lip sticks, silk stockings, high heels, and marcelled hair, and with rough hands, sport cars, loud voices, low abstract intelligences, and nonverbal interests, have pushed their way into our high schools. The conventional school men have resisted vocational education; they have sneered at physical education and the fine arts; they have dreaded the growing importance of students' activities. All in vain! Ajax defying the lightning and King Canute ordering back the tide were practical men compared with high-school faculties endeavoring to block the will of our industrial democracy.

Courts in many states have now ruled that pupils may not be denied the privilege of attending school until they have completed

[1] School of Education, New York University.

[2] Buckingham, B. R. "The Great Experiment," *Journal of Educational Research,* XVI (December, 1927), p. 377.

the high school or are twenty or twenty-one years of age. Neither failure nor lack of effort is legal justification for denying a pupil school membership. "Willful disobedience or open defiance of authority" alone justify exclusion.[3] The state assumes a protectorate over and a supervision of young people during this time of adjustment to adult society. Moreover, the state recognizes that, in the modern world, this adjustment is most difficult and most acute at adolescence; hence, state subsidies have provided for guidance officers.

Guidance in adjustment is, in fact, an inevitable corollary of compulsory school attendance; an adequate direction of guidance through specialists is intrinsic to the guidance function. Such guidance in adjustment and, hence, such expert direction of guidance must be broadly conceived, however. Douglass says:

> True guidance, however, means more than assistance to pupils in solving their vocational problems or in planning their school careers. It is more than a program of testing and administrative manipulation of groups of pupils; it is an educational philosophy which permeates the very fabric of the schools.[4]

Guidance is not something set apart from the educative process; it is inherent in every adjustment the child makes; it is involved in every stimulation, in every practice, and in every satisfaction or annoyance from birth till death. Hence, the expert is powerless to direct guidance procedures except as he can reorient the school's educative processes so as to control, so far as possible, these stimuli, exercises, and effects both within and beyond the school. Indeed, the functioning of guidance involves a new conception of the teaching and learning processes. So long as the stereotype prevailed that knowledge could be found in books or that one having "education" could impart it to one who has it not, it was natural for guidance to be conceived as something that a guide could give. But the present educational belief is that each one of us must create his own knowledge, that each one must evolve his own personality, and that each one must find his own way through life.

In a word, we now know that guidance and education both consist in helping boys and girls to set up objectives for themselves that are dynamic, reasonable, and valuable, and in helping them, as far as possible, to achieve their objectives. These worthy objectives are found in life—in play and work, at home and at school, at present and in the future.

Children have questions, although the conventional classroom

[3]State of New Jersey. Department of Public Instruction. "Right of Pupils to Continue in School," *Education Bulletin*, XIV (February, 1928), p. 173.

[4]Douglass, A. A. *Secondary Education*, p. 255.

atmosphere scarcely tends to encourage the asking of them. Nor is one or even ten interviews with a counselor likely to bring the most important questions into the open. There are questions regarding clothes, personal attraction, racial or nationalistic attitudes, spending money, properties, sex, and religion. We cannot give adequate answers to these questions, but we can help youths to seek and find their own answers both now and in the future.

The specialist must not be too deeply involved in details or even in personal interviews, or he may never see the forest because of the trees. The possibility of so swamping the counselor with duties as to impair his real usefulness is apparent in this partial list prepared by Virgil E. Dickson: classify children into ability groups; make programs and change programs; assign to special classes; give tests, score tests, interpret results; discover interests, aptitudes, and abilities; give vocational information courses; give individual guidance; visit homes and confer with parents, conduct class pilgrimages to factories; make contacts with parent-teacher associations, service clubs, and police departments; make placements and follow them up; make recommendations regarding institutional treatments; make research studies regarding pupil adjustments.[5]

La Rue says that "a principal is a man who is paid more to do less," in order that he may be fresh and free when emergencies arise. This should be likewise true of the counselor and the other guidance specialists. Theirs must be the vision; theirs the foresight; theirs the technical knowledge; theirs the freedom to help, now here and now there; and theirs the ability to make the contacts with pupils, parents, employers, and others whose emotional adjustments determine so potently the results of the conferences and the success of the remedial programs.

The personnel movement is in constant danger of diversion because of the American tendency to overorganize. A separate department is sometimes set up, and the classroom teachers are left out of all guidance functions, though they are sometimes expected to execute remedial measures which they do not understand. Many of the so-called "obstacles to guidance" are, indeed, characteristic of the "master surgeon-nurse" relationship. Five such obstacles may be summarized from an article by Payne Templeton.

1. Lack of intelligent interest—pupils do not seek help; school boards are not enthusiastic; Rotary Clubs want to bring in an outside speaker to do the job once and for all in two or three lectures.
2. Lack of understanding on the part of specialists and teachers that guidance involves other instruments than conferences.

[5] Proctor, W. M., and Ricciardi, Nicholas. *The Junior High School*, p. 190.

3. Lack of time. "The demands upon school and teacher are piling up: There are seven ultimate objectives and a hundred and one intermediate and proximate aims to be considered; emphasis must be placed upon the learning and study activities of the students; special attention is demanded for character training; good English must be part of all high-school work; the school is to connect vitally with the community and assist in community enterprises; there are the special weeks, and the outside organizations which demand something of the school; the extra-curriculum is to be lined up; dramatics, forensics, clubs, and athletics cannot be denied; the curriculum must be modernized."

4. Lack of knowledge about children's abilities and interests. School records are inadequate to tell an understandable story of a child.

5. Lack of definite information and unanimous opinion among the experts regarding the fundamental aims and concepts of guidance. This, he says, is fatal to the average principal because he simply must depend upon the expert.[6]

The five obstacles just cited, however, can be overcome only through an activity program which involves teachers, parents, pupils, potential employers, and service clubs. Unless the persons who must execute the recommendations are led to develop functioning interests and knowledges and to create their own philosophies and conceptions of the guidance movement, the guidance program of the specialists must limp along ineffectively.

As long as we depend on specialists to carry on the guidance program, the emphasis of the teachers will continue to be on lessons and jobs rather than on individual boys and girls. Teachers' multifarious duties lack unity and direction except as they are related to the guidance program. And the specialist, if he attempts to carry on the guidance work alone, becomes so overburdened that he soon retires to his card-catalogues and so escapes from the "too-bigness of it all."

The specialist must become a supervisor of guidance as well as a consultant for individual cases of serious maladjustment. School physicians and school nurses are now recognizing that the classroom and home-room teacher may frequently discover unusual lassitude, restlessness, flushed cheeks, and other symptoms such as would scarcely be apparent to the specialist.[7] The specialist realizes, too, that hygienic habits must be practiced in schoolrooms and in homes. It is, therefore, futile to attempt to carry on any reform unless parents and teachers are aware of its import.

In small high schools, the principal must usually act in place of

[6] Templeton, Payne. "Vocational Guidance," *The High School,* (October, 1928), pp. 14–17.

[7] Rogers, J. F. *School Hygiene and Physical Education,* p. 2. (United States Bureau of Education Bulletin, 1927, No. 3)

such a specialist, working through his teachers according to their ability and fitness to give assistance. Reavis and Woellner found that in 76.8 per cent of all high schools replying to their questionnaire, the principal gave personal attention to the guidance problems of boys, in 56.1 per cent of the cases he attended to the problems of girls; in 31.6 per cent of the schools, the assistant principal dealt with the boys' problems. In 50.2 per cent of the schools, a dean of girls cared for the problems of girls.[8] No matter how large the school, and no matter how many specialists may be included in the organization, the principal must retain the inspirational leadership; ultimate responsibility for success or failure rests with him. It is in the larger, more highly organized schools, indeed, that the dangers of specialization often intrude themselves. If guidance is allowed to become just another department of the already too much departmentalized organization of the large school, confusion becomes worse confounded.

According to Morgan and Cline, an ideal situation "would be something like this: a school counselor (assistant principal) who would have complete charge of the work; assistant counselors (class sponsors, for example, or one for each of the major divisions of curricular, departmental, or vocational endeavor); and advisers to whom the pupils of the school would be assigned in small groups of about thirty."[9] In addition, however, placement and follow-up officers and visiting teachers are needed. "No school should attempt to side-step the problem as to the proper placement of its output whether it be in further study, in employment, or in a combination of the two,"[10] says W. E. McVey.

In order to stimulate and exploit teacher interest in pupils, some schools organize the guidance program with a committee of teachers on advisement which co-ordinates the work of the specialists and that of the teacher-advisers. In some large cities, for example, Providence, Pasadena, Oakland, and Pittsburgh, the work is directed by a city supervisor or bureau head who attempts to direct both specialists and teachers in their guidance work.

At the Harvey (Illinois) Township High School and Junior College, a director of guidance endeavors, on the one hand, to build up correct attitudes and knowledges among "class-principals" and their home-room teachers, while, on the other hand, he supervises directly

[8] Reavis, W. C., and Woellner, R. C. "Administrative Practices in Dealing with Personnel Problems in Secondary Schools," *School Review*, (March, 1929), pp. 183–84.

[9] Morgan, M. Evan, and Cline, Erwin C. *Systematizing the Work of School Principals*, 1930. p. 61.

[10] "Guidance in Secondary Schools," *North Central Association Quarterly*, IV (December, 1929), p. 339.

the work of a dean of boys and a dean of girls who function through sponsorships of a boys' club and a girls' club respectively. These clubs are civic organizations which engage in many social welfare projects. The director of guidance commands the services of the special assistants, physician, nurse, remedial gymnasium instructor, school librarian, and placement advisers.

At North Fort Worth (Texas) High School the organization consists of the chief advisers and guidance committee. The principal and assistant principal take active leadership in the personnel work; they set up policies and deal personally with extreme adjustment cases. Classroom teachers, club sponsors, and curriculum advisers attend to all conferences that do not present such extraordinary difficulties that the assistance of the advisement specialists is required.

At Montclair (New Jersey) Senior High School, three groups of advisers are utilized, which clear through the deans and the principal. Apparently, however, the principal expects only a friendly attitude on the part of his home-room and classroom teachers; he believes that guidance is too important to leave to ordinary teachers, and that efforts on their part are misinterpreted by pupils who think that the teachers are dogging their steps. The deans accept direct responsibility for the first-year (tenth-grade) pupils; two other capable teachers guide the eleventh-grade pupils; the principal himself serves the graduating class. In addition, there are a college admissions guide, a commercial guide, and an applied-arts guide, who serve pupils and graduates in terms of their educational objectives.[11]

A thoroughly approvable and simpler organization is that of the Troup Junior High School of New Haven (Connecticut) a diagram of which is reproduced in Figure 1. The counselor is seen here not to have a direct, authoritative relationship to the teachers, but to be the co-ordinator of all guidance activities. On the one hand, she maintains contact with and secures the co-operation of extra-school agencies; the medical, psychological, and psychiatric clinics, the attendance and employment departments of the school organization, civic and welfare organizations of the community, and the department of exceptional children which gives group and individual tests. On the other hand, she is the expert helper of teachers and pupils within the school. She helps constantly in the organization and programs of home-rooms, clubs, students' councils, and other organizations. She carries on both group and individual counseling, and she visits the homes of pupils. She thus influences the guidance activities in the fields of physical, curricular, social, vocational, civic, avocational,

[11] Ferguson, Harold A. "Educational Guidance as Supervision," *The High School Teacher*, V (September, 1929), pp. 219–20.

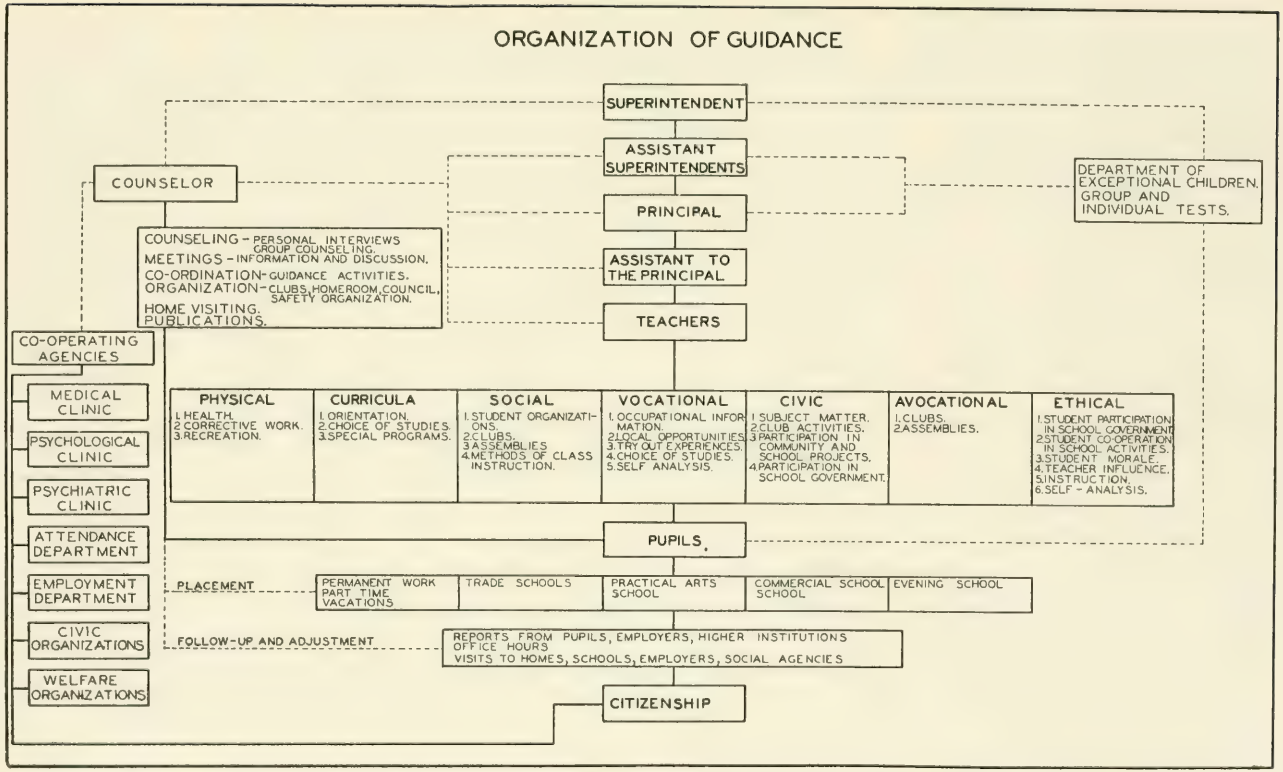

Fig. 1. Organization of Guidance in the Augusta Lewis Troup Junior High School, New Haven, Connecticut. (We are indebted to the Ohio State Department of Education for the use of this cut.)

and ethical education without in any way diminishing the benefits of direct pupil-teacher advisory relationships. And, finally, she follows up and helps in the further adjustments of all pupils who have left the school for work or to attend other schools; she keeps special office hours for them; she obtains reports from pupils, employers, and higher institutions; and visits the homes, schools, employers, and social agencies concerned. Whether or not there is any other one person who could do all the things that Miss Marie McNamara so successfully and tactfully accomplishes, the writer is not at all sure. But of the soundness of the relationship between specialist and all others concerned in the education of the pupils of any school unit, which she exemplifies, he has no doubts whatever.

Some Aspects of Counseling

By HAROLD L. HOLBROOK[12]

School-guidance counseling seeks to bring our mass education into the field of pupil adjustment. The educational process ranges from counseling on one hand to mass instruction on the other. From the pupils' point of view, both school counseling and classroom instruction contribute to self-guidance. And by that guidance we mean his educational, vocational, and social adjustment coming to fruition in self-discovery and self-realization.

In its fullest sense the problem of counseling applies all the way through pre-school, elementary, secondary, evening schools, and institutions of higher education and into the years of occupational, pre-parental, and parental adjustment and readjustment which follow. There is no question whatever as to the needs in all of these years, and in a very real sense that is the range of counseling as the community must eventually see it. Your own state department of education is outstanding in its cognizance of this major interpretation of guidance and counseling. Important as other phases of this problem are, our analysis of certain problems and possibilities in counseling will be directed in the main toward guidance as it applies to the public secondary school.

The large city high school may well have specialists in guidance devoting much of their time to certain subdivisions of the school counseling field. There may well be a curriculum counselor for problems of school adjustment and readjustment, teaching also the course that we in Pennsylvania call "School Opportunities," which

[12]Pennsylvania Department of Public Instruction.

your own state has so well developed in your manual on "Our American Schools and Their Opportunities." There may well be a vocational counselor giving part time to courses in occupations and subsequent occupational investigations and conferences. There may be a psychologist in charge of tests and measurements, a social counselor, or social case worker. There may be a chairman of school-guidance counselors, or a guidance director. These, articulating with each other, co-operating with subject instructors and extra-curricular teachers and with the community, may well represent a worth-while large school counseling organization. Time for counseling alone may be on the basis of one person to from five hundred to one thousand pupils, depending upon the needs of the school and community.

The smaller secondary school is a more typical situation. It has its possibilities for counseling with all of these services centering as far as they may in one or two persons. There may be a counselor for boys and a counselor for girls with services more or less interchangeable, either one acting as chairman for guidance. The principal may serve as counselor for boys; for girls, a woman in the faculty who in her own personality represents a type of womanhood parents of the community would have their daughters emulate. In the small school this work may have to be on an extra-curricular basis.

The movement for a dean of girls has much to contribute. Schools of higher education have shown us that we are missing three important adjustments, particularly for girls: the adjustment of the youth to himself which is in the field of mental hygiene; the adjustment of youth to other youth of his own sex; and the adjustment of boys to girls and girls to boys. It is through possibilities in the smaller secondary schools as well as in the larger, and through teacher training in guidance, that we may hope to reach many of the boys and girls of the coming generation.

In general there are two kinds of cumulative records. One is the transcription type in which data from original records are transferred to a master folder sheet or card. The secondary-school form of the American Council on Education represents one of the most complete. The second type has been used for years in Pennsylvania, as I believe it has in Ohio, the plain manila folder as a container for original data. This may well include original tests and measurements, self-analysis form filled by the pupil, teacher-conference and home-visit notes which, in simplest form, may be written on ordinary ruled composition paper, and the teacher's estimate of the pupil.

Cumulative records should as far as possible unfold the development and possibilities of the individual in terms of three main groups

of traits: general-intelligence traits, special-interest and aptitude traits, character and personality traits. General-intelligence traits obviously correlate closely with academic achievement in school which more than we realize, leans upon rote memory. Standard tests and measurements and scholastic marks serve for the interpretation of general intelligence as we think of it in school work. The self-analysis form with its unfolding of interests aids particularly in the matter of interests and aptitudes. Aptitudes, other than dormant, after all, are for the most part interests persistently maintained which result in achievement. Dormant aptitudes lie for the most part in the field of these abilities undeveloped and unknown. Character and personality traits may appear particularly in the teacher's estimate and in conference notes. Blacklisting must be avoided.

We commonly think of group guidance in connection with classes in school opportunities and occupations. Practice varies somewhat in their unfolding. With the ninth grade in high school coming more and more to offer a differentiated curriculum or, at least, various choices in subjects, we believe there is a need for seventh- and eighth-grade classes in school opportunities and occupations. One of the questions I commonly ask in talking things over with a school superintendent or principal is, "How much are your taxpayers and your state spending in helping these boys and girls go from the first grade as far as they may to the twelfth?" The answer is all the way from a thousand dollars in the rural school to millions. "Very well, Mr. Blank, you say you are spending $50,000 a year in helping your boys and girls go from the first grade to the twelfth. How much are you spending in helping them to find out where they are going from there, and how to get to that place?" It is not difficult for anyone to get the point.

At the present time many of us are thinking of classes in school opportunities and occupations as our only group guidance. Before we can entirely vision the problems and the possibilities in guidance, we must realize that any well-presented subject taught to groups is in a real sense group guidance. Some other subject of instruction may not have quite as much vocational guidance as group guidance in school opportunities and occupations at its best, but even these other subjects have a definite contribution to vocational guidance.

A large school system of which I know has until recently taken the attitude that information about school opportunities and occupations should be given through individual pupil conferences, that studies of occupations as taught have had too little effect as counseling service. Basic to this whole problem is the fact that as caretakers of the taxpayer's money we must utilize as far as possible the opportuni-

ties of group instruction. That is to say, such information with regard to school opportunities, occupations, and other aspects of life as may be given effectively to groups of pupils should be given in that way. In other words, information about school opportunities and occupations should be on the same basis as other subject instruction. As far as possible the teacher of school opportunities and occupations should be a school counselor.

Subject instruction will ultimately come to its own in a comprehensive guidance program. Let me explain. School subjects as I see them may be divided into five subject fields; fine arts, practical arts, biological sciences, social sciences, physical sciences. We know that subject instruction at its best means the interpretation of life situations in terms of a subject. That is to say, the boy and the girl going the rounds of classroom and laboratory make contacts that should be in the nature of exploration. If the teacher himself has a vision of his subject at work in the world's firing line, if the teacher has the feeling and the spiritual challenge of his subject in what it is doing outside of the classroom and properly employs the techniques of teaching, the boy and the girl, by nature and heredity endowed for the field represented, will have little trouble in getting the feeling and the throb, the educational and vocational call of that subject and the life work represented. Let us go one step further. I am willing to venture that twenty-five years from now the teacher of fine arts, of practical arts, of biological science, of social science, of physical science will be the person upon whom the school-guidance counselor or director will lean heavily for counseling service to boys and girls interested in the field represented. In other words, as I see it, under an effectively developed school-guidance program the counselor or the chairman of counselors will be a guidance leader or director to synchronize the counseling and case work of the school. Subject instructors, or heads of subject departments, will be members of the counseling staff. There is no good reason why this may not develop as rapidly as practical at the present time; certainly it is the program toward which our present organization should point.

With something like twenty thousand pay-roll jobs in this country it is impossible even for subject instructors to know intimately the occupations in the fields they represent. Each instructor in the school, however, can make contacts with workers of the community outstanding in their occupations, and with the school counselor can arrange, where there is need, for specialized counseling service. It is not enough for these specialists to come to the school assembly and talk before a group of boys and girls for the most part not particularly concerned in the subject presented. Through the Rotary, Kiwanis,

and other service clubs or directly, each subject field can have its field staff of advisers, and pupils may be sent to them in groups or individually for conferences.

The community has a contribution in educational guidance. Often many educational institutions are represented, and there is almost always an interest in the Alma Mater which can be turned to the advantage of the boy and girl in high school. Bulletin boards, shelves, and corners in the library can feature in succession various educational institutions with material furnished by local graduates. Scholarships and other aids come into the picture in this community co-operation. The community has possibilities in social guidance and counseling, and by social I mean all that ranges from social case work and emotional adjustments to the companionships of alumni interested in piloting graduates of their local high school into college.

Guidance leadership is needed to direct and synchronize such service as we have suggested. Some teachers may unduly interest children who might better choose a vocation in some other field. Workers in the community may be overzealous as to the possibilities or the defects of their vocations. Local representatives of this, that, and the other college may in their enthusiasm lead toward an institution not the best for a particular pupil. The more we utilize the possibilities of the teaching staff and the community at large, the more we must provide for adequate guidance leadership within the school.

School guidance is in the opinion of many the most promising field in education today, because it is a pioneer field, and because of its fundamental character. Counseling is as intensive and as subtle in its demands as the field of mental hygiene to which it is linked. It is broad as life itself. Because it is in its pioneer stage you and I and the others are considered successful. That, however, may not be so tomorrow. We must continue to study and give such study all that we have if we are to keep pace with the procession.

The field of school administration may well look at our school-guidance leaders as embryo principals and superintendents. The guidance leader, who has measured up to his possibilities in the kind of counseling and guidance leadership that we are considering here, may well be looked upon as an understudy in the field of school administration. Particularly is this true for men chosen as counselors. Above all, let us remember that we as counselors owe allegiance to our chief, the principal. Unless that is understood by all concerned, we can get nowhere.

All through what I have said you will see a philosophy and an application akin to your own. Few state leaders can present it otherwise. I have sought to picture in my words the place of counseling

in education, the school-guidance counselor in education, the need for cumulative records, the possibilities of group guidance, of guidance interpretation in subject instruction, the opportunities afforded by the community, and, as I see it, the limitless possibilities in the counselor and his future. Ohio is outstandingly coming to its own in this and other aspects of guidance.

Creating the Right Environment

By LUCILLE WALLACE[13]

ARE WE REALLY GIVING YOUTH MORE than a half-chance in self-realization? Growth must mean self-realization instead of mere self-expression, and adjustment must include integration in a progressive experience. The school should be a laboratory for creating mirrors of personality, the creation of the counselor and the pupils. Pride in creative work may write ecstasy upon the faces of the creators. Plans may be designed so that hundreds of volunteers may practice effectively the creating and judging of the school environment. The vocational corner, the social calendar, the activity program, special projects, office management, and monitor service are suggestive duties. The boys' or girls' league or the junior citizens' league under the commission plan offer large participation through home-room representation.

The whole individual should face mirrors of personality which reflect his health, his vocational plans, his leisure time, his adjustment in home life, his measure of good citizenship, and his philosophy of life. As the mirrors reflect, a pupil will work to achieve the personality which he admires.

A city miniature-golf champion may explain to his schoolmates in an assembly his process of thinking which won him the championship. Steady nerve, attention, keen thought, and self-confidence may become challenging factors in a more popular how-to-study program.

The theme of "happy flights for modern youth" may set up mirrors for avocational experiment with the "compass" symbolizing an aim in life, "favorable weather" being represented as the cooperative spirit, "shipmates" as friends, and "fancy stunts" as the use of leisure time.

L. P. Jacks bases good citizenship upon good workmanship, which is composed of trusteeship, competent technique, and skill. Thousands of dollars of public funds are saved by pupil participation.

[13] Colonel White Junior High School, Dayton.

Whether this service leads to poor workmanship in the classroom or whether it leads to good citizenship at all times is a tremendous challenge. Why should not the decisions of the courtesy court or of students' councils be just as important as those of the Federal Court?

Images are distorted if no one is appointed to assume responsibility, if a dean imposes a system not adapted to the school, if an unsympathetic and non-professional principal and faculty refuse cooperation, or if a dean lacks executive ability to inspire wise action, does not live a daily adventure in understanding, and does not have an undying faith that dreams shall become reality. Mirrors will continue to reflect, and as the school citizenship is absorbed in the business of living, millions of youthful inventors will help to create their environment which will set their spirits free for growth and integrated adjustment.

Launching the Freshmen

By ADAM LEROY JONES[1]

THE TOPIC UPON WHICH I HAVE BEEN ASKED TO SPEAK today is one in which I have had a special interest for many years. My own official duties are more particularly concerned with some of the preliminaries, but the process as a whole is closely knit and interest in one part of it means interest in all. Launching the Freshmen is indeed an enterprise in which a large proportion of our undergraduate faculty is vitally concerned. No doubt other colleges do many, or it may be all, of the things we do in this launching. We do not claim to be the sole authors of the various techniques which we employ. We are, however, much interested in them and in their purposes and results.

In our opinion the launching of Freshmen, like the launching of ships, presupposes much preparation. We do not build these particular ships, but clearly if the launching is to be successful we should know in advance as much as possible about the ships which we are to launch. Some ships should never be launched on certain seas, and our first endeavor is to exclude from the ceremony such as are likely to founder if launched. If structure or draft or tonnage or engines or steering gear are not such as to make a successful voyage reasonably probable, the ship is not received. It is not launched. It would certainly be regarded as highly wasteful in the shipping world to place upon the sea every ship which every kind of builder might offer. If any firm were to undertake to launch a ship without first using every effort to determine whether or not it was seaworthy, it would be regarded as criminally negligent. We try to avoid that sort of negligence.

We try to know our Freshmen as thoroughly as possible before they become Freshmen, with a view to excluding the probable failures in advance. I have said that we try to know the Freshmen. I should say we try to study them as well as possible. Knowing them fully would be an impossible undertaking. There is too much to learn. Someone has said that you can teach no one unless you first study him, and as we hope to teach as much as possible to those

[1] Columbia College, Columbia University.

whom we accept, we try to study them as well as possible in advance, both for the sake of selecting them as well as we can and also for the sake of guiding them in their later work. We begin as soon as their applications for admission are received. As a matter of course we examine closely their secondary-school records with a view to seeing what they have studied and how successfully they have studied. We note whether they have seemingly sought for the softer subjects, or whether they have stood up to the hard ones; whether they have carried through a number of subjects or whether they have merely made a lot of unfruitful beginnings; and whether they are strong or weak in the subjects on which their college work would be based. If the information which we receive on these points is not satisfactory, the candidate is not admitted.

The applications bring also a great deal of information regarding the candidate's interests and activities outside of the curriculum, his participation in school affairs of all kinds, his voluntary reading, his aims and his hobbies and special interests, and his life outside of school; whether he has had to work as well as study, and what kind of background he has had at home. A report direct from the school brings estimates of his moral, social, and intellectual qualities, of his outstanding achievements, of obstacles overcome. Whenever it is possible, as it is in by far the greater number of cases, a personal interview is arranged; this presents an opportunity for getting at the quality of the boy at first hand and of uncovering traits and interests he and his school may not have mentioned, as well as for checking up what may have been overoptimistic or overmodest statements in the application regarding his ability and achievements. It also provides an opportunity of learning whether he has any genuine intellectual interests. The entrance requirements include also an intelligence or scholastic aptitude test; this gives data which cannot be so completely or so reliably derived from any other source. A health history and a medical examination complete the preliminary picture. It seems to us that if such information can be obtained and evaluated and placed at the disposal of those concerned with launching the Freshmen, a good beginning will have been made.

We have Freshman Week. Almost every college has. The exercises include, besides the usual lectures and demonstrations and social occasions, placement tests, achievement tests, and registration. A feature which seems to arouse special interest is a series of visits to several of the laboratories. In the zoölogical laboratories the new students observe and are told about the major project of the whole department, certain studies in heredity. Similarly, demonstrations in the laboratories of other sciences and of certain of the engineering

departments bring to many their first idea of what a university laboratory is like and of what research means. We feel, however, that educationally one of the most important things about Freshman Week is to be found in the long-range results made possible by the placement and achievement tests. Doubtless many others have had experience similar to ours in the use of such tests. If so, I am sure they share our enthusiasm about the results. The placement tests are those given in certain of the regular entrance subjects, English, mathematics, and a modern foreign language, in particular. The achievement tests are in other and in more advanced subjects. They may be taken upon application either at admission or later. The service of the placement tests in determining at what stage of advancement a student may begin his college work in a given subject is invaluable. As we all know, a given number of entrance units in a subject, or a given number of years of preparation may mean very different things in the case of different students. It has been shown, for example, that in foreign languages one student may have attained greater competence after one year of instruction in a language than another after passing three years of high-school work in it. The test may show that a given student has a much better or a much poorer equipment in French, let us say, than his entrance record would indicate. He may have certain weaknesses that would make his failure in the course which he would normally enter a practical certainty. If the test shows that this is the case, he is required to take a more elementary course. If he should make a really high mark in such an elementary course, he would lose no credit since it would seem to be a fair assumption that his preparation was better than the test indicated and that he should not be penalized. Such an outcome is very rare. If he does not obtain a high mark, he receives no college credit for the course since it seems evident that he was not so well prepared as his entrance record had indicated.

It is extremely important to avoid putting students into classes for which they are not properly prepared: it is really essential at the beginning to keep them from getting in too much over their depths. A bad start, particularly in a new environment, may wreck a student's whole prospect of success for in a strange new world he may easily become discouraged if he finds the pace too fast. Everything possible should be done to avoid such an outcome. A good placement test makes it possible to escape such dangers. But however important this is, it is much more important to refrain from trying to make the Freshmen swim in water which is too shallow for them. Few things are more deadening to interest than being required to sit in a class in which the work is so easy that it makes no demands on the

student's mind. In our concern with the weaker brethren we often forget that the stronger need attention, too, and that we may be wasting good minds by not giving them something to work on.

I think we constantly make a serious mistake about our Freshmen. We assume that they merely want to go to college, whereas most of them really want an education. We think they will welcome what requires no effort. Too often they can and do assume this attitude because they have discovered that the work of the classes in which they have been placed makes no challenge, and they have either turned to things outside which do contain a challenge or to mere amusement or to a quest for excitement. They look for soft courses after we have taught them unwittingly that they must look to something outside of their courses for their real interests and their real work. Sometimes they have learned this unfortunate lesson even before they get to college. But if we give them something that they consider a man's job, most of them will rise to it. Much more important, therefore, than saving the slow student from failure through taking work which is too difficult is saving the able student from stagnation through taking classes which are too easy. Promotion to a course which will be a challenge, which will call for what he has to give is what such a student needs and usually wants.

Forty-eight per cent of our Freshmen in 1928 and 1929 and 61 per cent in 1930 were permitted, as a result of the placement examinations, to omit one or more courses which would otherwise have been required and were allowed to take more advanced courses instead. The class of about four hundred entering in 1928 anticipated, in all, 1,115 semester-hours of work; four of them anticipated as much as 20 semester-hours each. Thirty-seven student-years of time were saved which would otherwise have been wasted in work which was too easy for them. Only one failed in a course to which he had been promoted, and only one other got a mark as low as D. They were not given advanced credit for the courses from which they were excused. They were not offered a degree with less work. They were merely given a chance to go into classes where they could learn something, instead of being required to enter those in which they would merely be threshing over old straw. They were offered an opportunity of making as much as possible out of their four years. Our national mania for speed shows itself sometimes in a desire to rush through a college course in the shortest possible time without much reference to the quality of the achievement. The gratifying thing about these students has been that they have gone into these more advanced classes and that they have done the work successfully.

Indeed, they do it better on the whole than those who have not been promoted, but who are taking the courses for which their earlier work had presumably prepared them. In other words, a student who has offered, let us say, only two years of entrance French and who is placed by the test in the class normally presupposing three years of preparation does better on the whole than the boy who has had three years of preparation and who has been placed by the test in the same class.

The achievement tests have the same purpose, but they are not confined to entrance subjects. Any student who so desires may apply for an achievement test in any college subject, and if he can present evidence that there is a reasonable chance of his passing it, he is given an opportunity to take it. If he passes he may go into the next more advanced class or take another subject instead. Prescribed subjects are not infrequently disposed of in this way. Such requests are not very numerous, but we do have a good many of them first and last. What may happen is shown in one case which will tax your credulity as it has taxed mine, but it is vouched for by colleagues whose word I cannot question: A student entered the freshman class having completed, in school, mathematics through solid geometry, plane trigonometry, and advanced algebra. As he was interested in mathematics, he registered for a course in analytical geometry. After two or three weeks he went to the dean with a request for permission to study calculus privately with the privilege of taking an achievement test in the subject when he was ready. His request was granted. In less than a month he applied for an achievement test in differential calculus. Permission was given and the examiner was directed to make sure that the test was a real one. In reporting the result he stated that the boy had written one of the best examinations he had ever marked in the subject. The student requested the same privilege in integral calculus, and within another month he had achieved a similar result in that subject. By the end of the session he had done the same thing in differential equations and in the theoretical part of a difficult course in advanced inorganic chemistry. During this time he was carrying his regular program of freshman subjects and doing it well, but that alone was not enough to keep his mind fully occupied. If he had had no opportunity for promotion through his outside work, he would not have undertaken it at all, since he would have been obliged to go over all of it in class, anyway. What he has done, he has done as part of a well-defined plan, and he will in all probability be as far ahead by the end of his sophomore year as otherwise by the end of his senior year.

We have all known of very able boys who felt that college was

fruitless so far as intellectual growth was concerned, chiefly because they were given nothing solid to bite on. They were kept in the nursery when they should have been doing a real job. A mere test cannot transform a whole situation, but in some circumstances it may serve as a means for removing a serious obstacle, and this, we believe, the achievement test can do. And we can let it be known that the sort of minimum achievement which is within the competence of all but a small fraction of a class is not necessarily regarded by the college as ideal achievement. I do not say that all students in college have keen intellectual interests, active or dormant. But many of them have, and, if college is a place for intellectual interests, it should be so planned as to give a fair field to those who have or who can develop such interests.

Launching a Freshman means more, however, than merely finding the level of his intellectual achievement and the extent of his intellectual ambition. His adviser, in counseling him about his program of studies, must know more than that. Accordingly, the adviser is supplied not only with the complete list of the boy's entrance credits, with the quality of his performance in each, and with an indication of what class or section he should enter in his principal freshman subjects as determined by the placement and achievement tests and by his score in the college aptitude test. He is also given information regarding the student's plans, whether they are directed toward a general course or toward preparation for a professional school or a graduate school; he is informed regarding the student's intended place of residence and, if this is not on the campus, of the time required for the round trip from his home to the campus; he is told of the proportion, if any, of his total expenses which the boy plans to meet by his own earnings, and whether he expects to be employed during the college year; whether he already has a position, and if so, what his hours of employment are; of the state of his health; whether he has any serious physical defect; whether he expects to engage in any extra-curricular activities, and if so, what. The adviser is also given, in code, the student's score in the aptitude test. These data enable him to determine with some degree of certainty not only what courses, but how many courses, it would be wise for the Freshman to undertake. Very thoroughgoing medical examinations, including dental and eye examinations, are a part of the Freshman's initiation. These are most important for his later care and guidance.

Those who advise Freshmen regarding their programs are not selected at haphazard. There is a limited number of chief advisers,

each with several assistants. There is one chief adviser for the students who expect later to study medicine or dentistry, another for those who plan to enter the School of Engineering, another for those who intend to go into the School of Law, another for those who are to enter the School of Business, and another for those who are not planning to enter a professional school. Each of these advisers is thoroughly informed regarding the special requirements of the schools for which the students in his group are preparing and, knowing as much about the boy as he does, he can be expected to assist very greatly in properly advising him.

Launching Freshmen includes not merely introducing them to the college and to its various activities; it means not only setting them afloat in a new educational undertaking; it means that the whole purpose of the college has been defined and embodied in its curriculum, and that at the beginning they are put into the main current. Launching Freshmen means not merely giving them a proper start in the waters in which they are to sail; it means that the port to which they are to sail and the route to be followed have been foreseen. The curriculum in American colleges is most varied. Sometimes it is wholly formless, very rarely it is rigid and formal. There are infinite varieties between. In our own curriculum the first two years are devoted largely to exploratory courses; the last two to more advanced work and to a good measure of concentration. The course in Contemporary Civilization which now runs through two years, five hours per week in the first and three hours per week in the second, is an introductory course in the field of the social sciences. I shall not enlarge upon its content. It was given for ten years as a one-year course prescribed for all Freshmen, and its results in introducing Freshmen to the fields with which it dealt were satisfactory. Still more is expected of the two-year course. The Freshmen will have studied English and foreign language and elementary mathematics in school. Some will have studied one or more sciences, but many will not have done so. They will go on with English if not exempt on the basis of the placement test; many are exempt from the first half of the course, but not many from the whole course. They will continue a modern language, since few are likely to gain exemption from the whole requirement. They may go on in mathematics. If a student wishes to continue a science which he has already studied, he may do so. In any case he must choose two sciences, at least one of which should be taken in the freshman year. These science courses may be of the usual type continuing work previously begun, they may be first courses of the familiar sort preparatory to more advanced courses in the same field,

or they may be courses which are less technical in character, less exclusively avenues to specialization and more exploratory. He chooses one each from any two of the following groups: first, mathematics; second, physics and chemistry; and third, botany, geology, zoölogy, and astronomy. Approaches have been made toward courses in which the material from two or more of these science courses has been unified, but nothing comparable to the course in Contemporary Civilization has thus far appeared. However, by the end of his freshman year, the student will have had a taste of each of the main subdivisions of the college curriculum, and he should have made some progress toward discovering his own interests and aptitudes. If he has already chosen a professional field, his choices, both as a Freshman and later, are likely to be considerably curtailed, owing to the amount of prescribed work demanded by certain of the professional schools, but even so his range of choice will be considerable, and we endeavor to aid him in choosing intelligently. Whatever his plans, he should by the end of his freshman year be really launched in his college course, he should know the port, or at least the continent for which he is bound, and he should know something of the currents and headlands and lore of those who sail those seas.

Learning to Know the Freshman

By WILLIAM D. TURNBULL[2]

EVERY AUTUMN THOUSANDS of young men and women enroll in our colleges and universities. So great is the number of entrants that it is often said that everybody goes to college nowadays. Of course this is not literally true, but it is true that the college enrollments are composed of representatives of nearly all gradations of the social and economic scale.

It is also said that because of these increased enrollments and also on account of the spirit of our modern industrial efficiency we have carried over mass production from the field of industry into the field of education. Those who decry these conditions have given us such phrases as "the individual lost in the crowd," "the floundering Freshman," and "standardization in education." Perhaps it is unfair to say that we have mass education in its entirety. Rather let us say that we have had until only recently an educational program in our freshman classes that looked like mass production in industry.

The personnel procedures which have been instituted in our

[2] Ohio State University.

colleges and universities, although still frankly experimental, are based upon the sound premise that to teach the student effectively we must know him as an individual. We cannot prescribe for his mind collectively any more than a physician can treat diseases wholesale; each case requires treatment suited to his specific need. The freshman class is no longer thought of as just a large mass of raw material, one-half of which is to melt away by the end of the first year. The Freshman does not enter the university unwelcomed and unknown as in other years, but is formally received with an elaborate program lasting from three to five days, and in some instances as many as seven days. The custom of Freshman Week began in Maine in 1923. Last fall marked Ohio State's fourth observance of these ceremonies to welcome the Freshmen and initiate them into life at the University.

First to make the personal acquaintance of the Freshmen are the faculty advisers. Two hundred faculty members voluntarily gave their services during Freshman Week in 1930. Each of the one hundred sections was comprised of thirty students with two faculty members in charge. The friendly guidance of these faculty advisers included a personal interview for every student.

The Freshmen feel that this personal conference is an important and valuable part of their initiation, for in unsigned questionnaires which they returned the Freshmen voted the interview with the faculty adviser one of the three most popular of the twenty-eight events. The freshman manual was voted the most valuable; second in value was the talk by the junior dean. In the college of engineering these faculty advisers made specific recommendations for about a hundred students out of a total of five hundred.

After such pains had been taken to arrange for every student to meet his faculty adviser personally during Freshman Week, the members of the committee thought a follow-up interview was necessary to reap the full benefit. Many of the faculty members had expressed a desire to renew acquaintance with the men they had met at the opening of school. Accordingly, the second conferences were arranged at a time when the mid-quarter marks would be available and the faculty leader could compare his original estimate with the performance of the student up to that time and administer such additional advice and counsel as he might think necessary. The interviewer was reminded that it is just as important to improve the work of the able student as to pull up the work of the poor student.

For this follow-up, the faculty adviser was given for each student a folder containing: (1) the adviser's original report, (2) a list of mid-quarter marks with space for comment on each course, and

(3) a blank for reporting the interview. By asking specific questions this blank cleverly avoided the danger of a meaningless "O.K." in the middle of the sheet.

The students were asked whether they found the follow-up interview of value. Seventy-three of the 500 students were non-committal, 52 derived no benefit, but an overwhelming majority, 375, voted the follow-up a good thing.

When classes begin, the new students in our university make additional friends among the faculty. The instructors in the various courses introduce themselves, the first step in getting acquainted. There are limitations to the acquaintance of students and faculty. The well-known ideal, the student on one end of a log and Mark Hopkins on the other, is fine but impracticable in these days of large enrollments and timber scarcity. Yet despite limitations imposed by large sections and heavy schedules, the instructors, too, are learning to know the Freshmen by name, as individuals and not just by position in the classroom.

We have gone even further and organized interview sections which are exactly what the name implies, sections in which every student meets his instructor personally. In the winter of 1928–29 some of the instructors volunteered to have conferences with their students. The movement has grown so that last autumn quarter 94 class sections containing 2,720 students were meeting their instructors for interviews.

The objectives of the interviews are: (1) to locate gifted students and either to hold them to higher standards or to supply them with extra problems which appeal to their special interests, (2) to identify the weak students and to aid them in overcoming their difficulties, and (3) to give individual attention and special assistance in methods of studying. The students give enthusiastic reports of these interviews with their instructors. If there were no other benefit, this opportunity for each student to meet his instructor as a man, a gentleman, if you please, would amply justify inclusion of the interview system as part of the instructional work.

After Freshman Week the junior dean faces the task and pleasure of making a bevy of new friends, in my case about five hundred. They are not entirely unknown to me; in fact, I have a record for each of them, a folder containing the admission blank prepared by the university examiner, with picture and comments from the boy, his parents, and his high-school teachers, and the report of his faculty adviser. I have his high-school marks, high-school ranking, and the returns from the previous-preparation and intelli-

gence tests. He is pretty thoroughly catalogued. The preliminary information is useful. In fact, I should like to have more. It would be a fine thing if the student would bring to college a cumulative record of his accomplishments in the grades and in high school, through some such system as that used in the *Study of Secondary and Higher Education in Pennsylvania* made by the Carnegie Foundation.

Each student reports at my office for his scheduled personal interview. We have a friendly little chat and I try to advise him about anything that might affect his career at the University later, scholastically, socially, professionally, or personally. We part friends. I feel that I have his confidence and I encourage him to come in to see me again. After the interview an entry is made on the card in the file right at my elbow. This record is a valuable aid in knowing the Freshman.

The junior dean is supposed to be an educator, not a social worker. But all kinds of social problems are presented to him, and he has the chance to help heal heartaches, to smooth over difficulties of the most personal sort. Conditions at home, I believe, worry more of our students than we would ever suspect. Sometimes just telling these troubles appears to help the student, and sometimes the junior dean can do something to solve them.

These personal interviews with the students bring to light many interesting cases:

Charles R—— had run away from home, and was attending college against the wishes of his father. A letter from the junior dean to the parent effected a reconciliation and the boy went home for Thanksgiving.

George W——, a brilliant student, was very much disturbed about the choice of a career. He had had quite a number of suggestions from his friends. He had the ability to master thoroughly any of our courses but wanted to be sure that he was choosing wisely. After several interviews he came to a decision and is pleased with his choice.

William R—— came to the University woefully under-financed; in fact, he had just $2.15 and no work when he came into the office. He was given some part-time work at once and has since secured permanent employment. He is now one of our best students.

Edward M—— had enrolled in the wrong college and through lack of interest had failed. He had not chosen engineering on his own account, but because his parents had insisted on it. After many solemn promises on his part he was reinstated for transfer to another college and has made good in the college of his own choice.

This glowing record of successes may give the impression that all students after seeing the junior dean live happily ever afterward. I am sorry to have to admit that such is not the case. Sometimes

the junior dean fails. Once in a while a homesick boy cries a little in my office, and decides that he will have to give it up and go back home. Occasionally a student comes to the University with inadequate preparation and this, coupled with seeming lack of native ability, proves disastrous in spite of all that the instructors and junior dean can do for him. Such unfortunate cases make one feel that had the student been given individual attention and guidance in selecting a vocation, he might have chosen work better suited to his capacity and been spared the ignominy of failure in college.

About two hundred years ago a French philosopher wrote, "It is easier to know mankind in general than man individually." I always think of that when I hear such expressions as "the average student," "the sophomore level," "the freshman area." Knowing John Jones and William Lee as individuals and personalities may seem like routine in these days of big business when all executives generalize, but it is the only way really to know these men.

The Use of Surveys

By ARTHUR J. KLEIN[3]

Making educational surveys combines all the satisfactions of professional respectability and of telling other people how to run their own business. Nevertheless, every surveyor must feel the limitations of the work that he performs. He can never be sure what effects come from the surveys, since educational institutions are social agencies, and no social effect arises from a single or simple cause. The influence of a survey is exercised in the midst of an extremely intricate series of causes. This difficulty in judging the use to which surveys are put is accentuated by the fact that recommendations made by a survey staff become effective only through the work of the persons charged with actual operation of educational enterprises. Very seldom does one find a survey report used either by a faculty member or student as a direct guide in choosing a place of work or study. Surveys are still further limited in their application by the fact that they usually deal so largely with administrative matters that to most people they seem very remote from what students receive at institutions. If the educational surveyor required the encouragement of immediate and perfectly apparent results, he would indeed be subject to tremendous discouragement.

Large areas of the fields with which surveys deal are conven-

[3] Ohio State University.

tionally defined. Certain elements of institutional life and management must inevitably be considered whatever the ultimate objectives of the survey may be. Financial support, methods of organization and administration, and personnel factors must be studied. The study of the geographical, social, and economic settings of the institutions, their relation to other institutions and to other parts of the educational system; their control; their standards of scholarship; the training, experience, loads, and salaries of the members of their teaching staffs; their buildings, libraries, and equipment involve hard, uninteresting, and tedious, pick-and-shovel operations that soon lose their novelty in large part after the methods and techniques have been developed and learned. Many an experienced surveyor finds this phase of his task an ever growing burden which he is glad to shuffle off to the tender mercies of the graduate student or the less experienced.

Obviously, however, there must be some grounds for the enthusiasm with which those who conduct educational surveys pursue their calling. Five more or less immediate uses of surveys may be mentioned that satisfy the surveyor's desire to contribute theoretically and practically to the welfare of education:

1. Surveys serve to give currency to standards of educational procedure and practice that are developed scientifically by specialized workers.
2. They may develop new techniques of judgment of educational procedure and serve themselves to develop new standards which are sometimes adopted.
3. Quite apart from techniques and standards of education, they may offer new solutions to old difficulties. New conceptions and untried proposals may be presented in the light of specific situations.
4. They serve to bring a fresh viewpoint to local situations and agitate administrations and faculties to new thought and action, even though such thoughts and action may not be in accordance with the opinions of the survey itself.
5. They serve as an extremely effective measure of education for those who are conducting the survey and therefore indirectly, since surveyors are usually teachers, to bring all students into contact with educational reality.

More important, however, than these uses which might all be accomplished by other means, the usefulness of surveys may be justified by reason of a value that is individual and peculiar to this type of educational work. In my opinion, this value lies in the fact that surveys attempt to view as an articulated whole all the information, personalities, and ideals that make an institution or educational field a vital, living, social force. Using all the techniques and methods of measuring, all the bases of judging persons and things,

all the information available of whatever kind, the survey attempts to regard them not as isolated phenomena, but as aspects of one living organism. In this day of specialization of function and of thought, even an imperfect attempt to estimate the interplay of forces in one of our most important social agencies with reference to the rest of society places the surveyor on the frontiers of social and educational endeavor. This point of view is one that is constantly demanded of the administrator and is one which forces him to become a philosopher of education, not a mere operator of machinery. The chief use of the survey lies in the fact that it provides the meeting place for educational philosophy and practical administration.

Significant Factors in Guidance

By DEWITT S. MORGAN[1]

THE GENERAL THEME OF THIS CONFERENCE places emphasis upon a phase of our school program which we can never afford to overlook. I do not know what influences were at work to lead those who are directing this Conference to turn the spotlight on the item of individuality, but a recent experience brought home to me the need for stressing what the public school does to foster this priceless attribute. I recently overheard a charming gentleman of the old school, who in all likelihood had not spent a day in a public school for more than a quarter of a century, say, "This system of public education is taking boys and girls and standardizing all that they do; they all come out as from a common mold." Now this comment was made in the midst of a school performance where individual talents were really on parade. Some pupils were speaking, some were singing, some were playing violins, some were playing brasses. So far as one could tell there was not the semblance of likeness either in looks, in thought, or in act between any two of those children. And yet so great had been the effect of popular discussions on this subject that this truly good citizen could not see individuality in the process of making. The public mind is greatly confused regarding this question just now. Because we have set out to educate all of our people, we are accused of trying to make all of our people alike. Because we have education of the masses, there is a popular feeling that we have mass education. On the contrary, it is a paradox in education that it was not until we provided for education for the masses that we could get away from educational programs which would tend to make all of our people alike. When we set out upon the adventure of educating all of our boys and girls, we become conscious of the magnitude of their individual differences, and we at once set about to establish conditions whereby individuality could develop, whereby special talents might be nurtured, whereby personality might grow, whereby each child might live his own life in his own way in so far as that is not contrary to the general welfare of the society in which he lives. The American public school is now furnishing the conditions in which wholesome

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individuality can expand. It is offering the first chance that the human race ever had for the great mass to live life according to individual desires and inclinations.

In discussing the factors of individuality which are significant for high-school guidance, it is assumed at the outset that development of individuality is a major interest of the public school. Since the high-school age is characterized by acceleration in development of individual differences, and since so many qualities come to light in this period which determine the course of the later years, I wish to discuss certain of these qualities as they relate to the problem of guidance in the broad sense.

A great contribution was made to the field of political economy when men began to think in terms of the factors of production, natural resources, labor, capital, and management. Each of these four factors takes on many forms and varieties, but thinking is clarified by consideration of the essential relationships which must be upheld between the four. It seems that a somewhat similar organization of our thinking is necessary in order that we may proceed constructively toward solving our problems of the guidance of individuals. I realize that one will be contributing nothing new in enumerating these factors of individuality, but we can, perhaps profitably, discuss the mode of evaluating each one of the factors in the light of the others. To be more specific, we are now dealing quite commonly with three factors of individuality in any program of guidance, native ability, interest or aim, and economic status. These must be reckoned with as three fundamental factors which determine in large degree what an individual can do and will do. The first factor deals with potential power. The second deals with forces which will set powers in motion. The third deals with material conditions which will hamper or help the individual to set his abilities to work and to achieve his aims. Now, just as in economics we cannot think of any productive scheme which can be set in motion by either natural resources, or labor, or capital, or management, working alone, so in the scheme of an individual life it is not possible to think of abilities, or aims, or economic opportunity working individually without being supplemented by the other factors. In our program of making inventories of individuals to aid in their guidance it is quite necessary that we get a balanced picture as it involves each of these factors, and that we do not rely upon any one of these as the determiner of our counsel.

We must remember that each factor has infinite forms and gradations. Abilities not only vary in kind; they present themselves

in degrees as infinite as the possible tones of a violin string. Interests and aims are equally varied; they range from no aim or interest at all to those which are fully settled and definitely fixed. Economic status varies from conditions in which the pupil is himself the sole support of a mother and a large family of brothers and sisters to conditions in which no thought need be given to costs in planning a career. Let us think of these only at the extremes. Contrast the following cases which might be designated as eight distinct types:

Ability	Aim	Opportunity
1. High	Definite and logical	Unlimited
2. High	Definite and logical	None
3. High	None	Unlimited
4. High	None	None
5. Low	Definite	Unlimited
6. Low	Definite	None
7. Low	None	Unlimited
8. Low	None	None

Within the range of the first four types a varied set of problems is presented. The first type, with high ability, definite aim, and unlimited opportunity, is as decided a contrast from the standpoint of guidance to the fourth type, high ability, no aim, and no opportunity, as it is from the third type with high ability, no aim, but unlimited opportunity. The procedure for each case which might fall within these types must, of course, be highly individualized. But when dealing with a complete guidance program in a high school one is inclined to believe that it will help in individual guidance to devise a method whereby pupils may be catalogued according to the presence or absence of one or all of the three basic factors. Such a procedure gives a point of departure for each case. For example, if one were dealing with a case which had been designated as Type 5 he would know at once that the factors were ability of low order, aim definite, and high economic opportunity. From there on the individual program is a matter of professional judgment; but the adviser, whoever he may be, at least has a cue.

I trust that I may not be construed as trying to oversimplify what must remain essentially a complex and intricate problem. I am quite sure, however, that our programs of guidance will be helped if we begin to lay plans for organizing and classifying our cases according to some major factors in guidance such as these which I am here suggesting. We now have our pupils classified according to their progress in subject-matter; we are making classification according to ability; I am suggesting that the guidance program get a classification of pupils in terms of the guidance factors involved.

Upon the basis of the rough classification which I have suggested, let us see how different our general procedure can and must be for each type. The first type, with ability high, aim definite and logical, unlimited opportunity, is our simplest problem. Perhaps the only problem involved would be one of making a little more sure that the aim is the best one, but in such a case there is a large chance that the pupil will work out a logical career for himself. The second type, ability high, aim definite, no economic opportunity, presents a problem of an entirely different sort. Under ordinary conditions this is relatively simple as compared with the problems involved in the types which follow. The resourcefulness of boys and girls, the benign attitude of the public at large toward the ambitious student, the establishment of foundations for scholarships for those of promise make it possible for us to find a way out for almost any boy or girl who comes within this classification. It is only the rare case in which we are faced by the unsolvable problem of a pupil who is not only without funds but must support a broken family.

The third type, ability high, no aim, unlimited opportunity, brings up the whole problem of the development of purpose in the high-school years. How much effort should we make to get aims to become fixed at a relatively early age? If our objective is not to bring about a formulation of definite aims, what forms of general aims should we hope to awaken? What contribution can we expect courses in occupations to make to such a pupil? What can we hope for from exploration, excursions, and the influence of prominent citizens in the community? It is quite unsafe to generalize in the field of guidance at this stage of our progress, but I venture to say that pupils of the third type warrant an added amount of vigilance on our part. High ability, plenty of money, and no aim make a bad combination. It is easier for such a boy to set his course down than up. We dare not linger over academic differences concerning the undesirability of too early vocational choice when such cases are involved. Indeed, we need to find the quickest means of giving some aim and purpose to such pupils, even though that aim should need to be changed many times later on. The longer one works with youth, the more convinced one becomes of the value of a wholesome purpose. All the resources of the school which have potentialities for rousing ambition need to be brought into action in the interest of the pupils who tend to be without purpose.

The fourth type, with ability high, no aim, and no opportunity, presents the combined problems of the second and third types. For these pupils the school must first awaken a purpose, if it can. If this purpose develops sufficiently that the pupil keeps his abilities at

work, and if the school demands a high standard of scholarship, then the resources of economic assistance may later be brought into action.

The low-ability groups bring problems of an entirely different type. If we venture in any case to say the student's ability is low, we need to be sure of our ground. Of course, we can find that it is low in terms of intelligence quotients, or of vocabulary scores, or in reading comprehension. But if we search long enough and far enough we may find some field in which his ability can be designated as high. We have found boys in our own school who, according to all of our standard measures of ability, rank discouragingly low. Yet from the ranks of these we can point to one who is distinguishing himself as a trumpet player in a nationally known orchestra, another who is winning national honors in art, another who is head of a sales organization of magnitude. The abilities of these persons were not of a low order; our available measures did not explore the fields in which their abilities lay. In dealing with apparently low-ability types, our first concern must be to keep up the search until we do find the thing which each pupil can do best.

The fifth type embodies cases in which ability is low, aim is definite, and opportunity is unlimited. Our schools are carrying many such cases which present a tragic aspect. Perhaps the most common form is that in which the pupil comes from a home of wealth, with parents likely without much formal education but with unbounded ambition for their children. There is one goal upon which they have set their hearts, that their children shall go to college, that they shall come home with the stamp College Graduate. Our measures of ability do apply with an almost deadly accuracy to such students. Below certain critical lines we know that the chance for college success is well-nigh zero. We must summon all the tact and diplomacy which we can command to reconcile both parents and pupil to abandon one form of career for another which will give greater chance of success.

Often cases of low ability and definite aim having no economic opportunity are just as perplexing as they relate to college preparation as are those similar cases differing only in the last-mentioned qualification. The glamour of the term "College Education" is luring many homes to sacrifices which are not justified on the basis of reasonable chance for realization of their hopes. These cases are often as hard to turn to more promising efforts as are those who are not under economic stress. The school needs to have its finger on such cases in order that the most effective counsel may be offered to lead both parents and children to establish more logical aims.

Those belonging to the group characterized by low ability, no

purpose, but plenty of money present many critical problems. Two things must be done simultaneously: the counselor must run the gamut of possibilities to find what abilities do exist, and upon these build whatever hopes and ambitions he can. I am quite sure every pupil of this type within a school should be marked for special care, for all the guidance and counsel that we can offer will be needed, and all that we can do will be none too much.

The eighth type raises all the problems which can come when we wish to achieve something and have but little with which to work. All too often these three conditions run together, little or no ability, no purpose, and no economic opportunity. With these students the school must begin as it does with all of the other low-ability types, an effort must be made to find some abilities. When any vestige of ability is found, it must be given a chance, so that the pupil will have a taste of success and achievement upon which it may be possible to bring into existence hope and aspiration which, in too many cases of this kind, are all but dead. The one and only hope for such pupils lies in the service which the public school can give. If we can do nothing, then all that is left is a future of drudgery.

In this brief discussion of types, only the extremes in variability for each of three factors have been considered: ability, high or low; aim, definite or no aim; economic opportunity, unlimited or none at all. Of course, the actual cases which we deal with seldom lie at the extreme of the scale of any factor. Ability is usually neither high nor low, but somewhere around average. Aim is neither definite nor totally lacking, but ordinarily vague and uncertain. Economic opportunity ordinarily runs to neither extreme, but is limited and circumscribed to some extent. When we introduce gradations in the scales for these three factors, we at once enter the realm of infinite variety of conditions and circumstances to be encountered. But to think of our cases in terms of their relative nearness to some type described will help, I believe, in establishing a general method of approach to a solution of each one. One thing seems quite sure, our guidance policies cannot be predicated upon abilities of pupils alone; nor can they be based upon hopes of pupils and parents; nor can they be determined by the fact that the pupil has or has not economic advantages. But the fact remains that the pupil will follow one definite and individual course, which is his and his alone, determined in great measure by the resultant of these three factors. It is certainly our task to help the pupil to appraise each one of these factors as they apply to him alone and to assist him to work in the direction which will result in the best possible life.

There is a fourth general factor which I believe we must now add to our three. One cannot deal long with counseling of high-school pupils without realizing that more is involved than merely abilities, aims, and opportunities. I shall give an example to show somewhat concretely what I have in mind. Several years ago one of our graduates with a brilliant school record was being studied in the light of the type of position to which we should send her. She had done work of superior quality in stenography and typewriting as well as in general bookkeeping courses. For accuracy and neatness no pupil in our school was her superior, but she was not quick. She worked well alone, but not well in a group. One of our teachers of fine judgment, recognizing this girl's true worth but also recognizing the fact that she played a lone hand better, advised her not to enter a large office, but to take a position in an office where she could work quite by herself. This advice was based upon the teacher's recognition of the fact that in a large organization that girl's rate of work would be measured against others, that she would not thrive in a group, and that to be in such a situation would be to her manifest disadvantage. As chance would have it, the girl got her first opportunity in a large office. Three weeks after she went to work she was discharged merely because she did not quite keep up the pace. The girl herself said she would not sacrifice accuracy and neatness for speed. Through the teacher's help the girl was soon placed in a small office where she is the sole employee. She has been there now for more than three years, her salary is as good or better than it would have been had she stayed on the job which she lost, and her employers say that she is worth her weight in gold. She has time to do her work according to her own standards of workmanship.

What determined failure or success in this case? It was not ability as we usually use the term, nor was it scholastic achievement. The important factor was to get this girl into a position suited to her pronounced individual trait. Thus we come to what I believe must be included as a fourth factor, personal traits, or, if you will, individuality in the accepted meaning of that term. Individuality is often the real determiner of what a pupil can and will do. It must be reckoned with in any plans of guidance which we may adopt.

Let me emphasize several things about the case just cited. First, of course, is the fact that the personal trait was of such tremendous significance. Second, it took a discerning teacher to see its significance. And third, perhaps most interesting of all, the trait was as advantageous in one situation as it was disadvantageous in another. The specialized nature of modern industrial organization gives us admirable chance for adapting personalities and individual qualities

to special conditions. There are positions where diplomacy is an asset; perhaps there are some others where it is a liability. Some positions demand high courage; others call for but little. Some places call for cheerful personality; in others it is perhaps relatively unimportant. Some tasks demand patience; others call for impetuosity. Some tasks demand initiative; others call only for obedience. But modern business can use all these in various degrees. It is our task to learn these attributes of individuality for each of our pupils, on the one hand, and to know the kind of situation in which they best work, on the other. When we can do so we can use this fourth factor to tremendous advantage.

The evaluation of this fourth factor is a perplexing administrative problem. Mr. Briggs, in his book *Curriculum Problems*, reports the project of having a group of students list from a dictionary all adjectives which they considered representing desirable traits. A list of more than seven hundred traits developed. This list was then given to some 350 educators, who were asked to select from the seven hundred traits the ten of first importance, the ten second in importance, and the ten third in importance. This compilation forms a good working list, but we could not ask our teachers to score every pupil on each of the thirty traits. A teacher with 150 pupils, in addition to giving marks in subjects taught, would have to render 4,500 different judgments. We believe that such a system would break down of its own might. A reduction to the basis of the first ten traits would require 1,500 judgments, still too many. In the face of this we have been working toward simplification of the process that we might get some measure of the individual traits of pupils for aid to guidance.

Our first approach was to make an attempt to get merely a threefold classification of personal traits as they affect pupil relationships in school and as they would affect such relationships in life at large. Our own classification is as follows:

1. Traits which contribute to class or group achievement: these include co-operativeness, fair-mindedness, democratic spirit, constructive participation, wholesome leadership.
2. Traits which bring the pupil favorable personal consideration, but which do not necessarily contribute greatly to group success: these include affability, courtesy, kindliness, neatness, cordiality, generosity.
3. Traits which are fundamental for personal success, but which do not necessarily contribute one way or another to the first two outcomes. These are honesty, trustworthiness, initiative, perseverance, regularity, promptness, steadfastness, thrift, obedience, full use of abilities.

At the close of each semester each teacher, when making up the

term-end records, reports those pupils who have in a special way manifested desirable personal qualities under one of the three types. In order that all pupils may have an equal chance for such citation and that they may be of equal significance, each teacher is expected to make citation of the superior 20 per cent of all pupils of which he has charge during the semester. This means that if a teacher has had 150 pupils in his care in any capacity, class, choruses, clubs, or athletics, citation will be expected for 30 of them. When the teacher at the close of the semester makes up the marks for office record, an exponent is added to the scholarship mark of each student cited according to the quality in which he has shown superiority. This is easily interpreted along with the pupil's scholarship record.

Now each pupil in each semester will have not less than five teachers, five chances for citation. In eight semesters there will be at least 40 chances to be cited. A pupil who is in his high-school course would receive 40 marks with exponents would have demonstrated himself to be in the superior 20 per cent in 40 groups. If exponents "1" predominate, the pupil ranks well with his associates; he has high chance of success in situations where group action is involved. If exponents "2" predominate, the pupil is of the type that wins personal favor; he could be a hotel clerk, a personal emissary for an executive, a salesman. If exponents "3" predominate, the pupil is equally worthy; he carries attributes which are basic to character, although they do not necessarily involve social relationships. This is the kind of pupil who comes to class, does all assignments perfectly, attends to his own business, but cares but little about associates. Such a pupil may be an excellent accountant, a laboratory worker, a technician of the highest quality—perhaps a writer, a trusted employee, a fine purposeful worker in any organization. To this class belonged the girl who did well in the small office but not so well in the large one.

We are finding that this does furnish some picture of individuality of pupils which serves a purpose. When a boy has had 40 contacts without having risen to the position of the superior 20 per cent in any one of them, at least the pupil has not used his chances to create a favorable impression concerning himself. The pupil has lived with 40 groups over a period of eighteen weeks; he has been under the normal and natural observation which would occur in shop or factory or bank; and still he has not come to notice sufficiently in any case to be in the highest fifth. At least we can conclude that if such a student were graded minutely he would not be in the upper rank. This system of records gives us, we believe, an excellent starting point for studying individual traits more intensively.

But these traits, important as they are, must not be overemphasized to the exclusion of other factors. Bashfulness in a boy of high ability is an entirely different problem from the same trait in a boy of low ability. Failure to be punctual is of somewhat different significance for one who aspires to be a teacher than it is for one who wishes to be a writer. Winsomeness is of higher value to the girl who wishes to be a saleswoman than it is for the girl who wishes to be a statistician. This factor of personal traits only has significance when construed in the light of the whole individual.

All of us, I believe, are finding that the fundamental problem in development of guidance plans is to get systems that are workable. So complex is the individual when we begin to study him that it is the easiest thing in the world to get records so complex that we can do nothing with them. It is not hard to file away a tremendous mass of data about pupils; it is hard to keep it in such form that it can be interpreted and be made to function. A good general picture of a few factors is better working material for guidance in the ordinary cases than such minute and detailed information on so many items that in many instances it becomes conflicting and contradictory.

Our guidance in the high school seems to hinge upon our ability to get a true and accurate appraisal of each individual in the light of four factors: first, abilities; second, interests and aims; third, economic opportunity; fourth, personal traits. We cannot take these factors and make composite scores as we sometimes try to do with measures of ability. Each factor must be considered independently as a definite component in determining the course of a life. But in our efforts to guide our pupils it is our task to see each of these factors clearly for each pupil with whom we deal and then to develop that degree of professional judgment and good sense which will enable us to give wise counsel.

Teaching-Load and Efficiency of Instruction

By T. C. HOLY[2]

SINCE TEACHERS' SALARIES AMOUNTED TO 75 per cent of the total operating cost of public schools in the United States in 1925–26, the number and salaries of the teachers become a chief factor in the cost of public education. The number of teachers in turn, in all except the schools with limited enrollments, is determined by the size of the classes. The two most significant studies on the effect of the

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size of class were made by P. R. Stevenson, formerly of the Bureau of Educational Research, Ohio State University, entitled *Smaller Classes or Larger* and *Class-Size in the Elementary Schools*. Conclusions drawn from these studies, one in the high-school and the other in the elementary-school field, were in substance the size of class when considered alone is not the determining factor in instruction. Since the completion of these two studies and others which show in general the same results, it often has been said the total teaching-load is the significant factor rather than the size of class.

This experiment was therefore set up to secure information on the effect of the total teaching-load in the field of high-school English. The experiment, which was conducted in the Akron public schools, will be briefly described. Two English teachers in Akron South High School, rated as equally efficient by the superintendent's office, agreed to vary their teaching-loads during 1929–30. The first of these taught six English classes ranging in size from 38 to 42 during the first semester, while the second taught six English classes ranging from 20 to 27. At the end of the first semester the teachers were exchanged with the classes remaining the same. By so doing, comparisons could be made with the teacher factor held constant.

Form I of Tressler's Minimum Essentials, Hudelson's Typical Composition Ability Scale, Charters' Diagnostic Language Test, and Wilson's Language Error Test were given all pupils at the beginning of the first semester. Seventeen weeks later the second form of each of these tests was given, while seventeen weeks after the beginning of the second semester different forms of these same tests were again given. Although no effort was made to establish classes of relatively equal intelligence, the Terman Group Test of Mental Ability, Form A was given to all pupils in order to have some information regarding the ability of the classes. On this measure of intelligence no significant difference was found in their make-up.

Since the study included but two teachers and 384 pupils, of whom 238 were grouped in six large classes and 146 in six small classes, no general conclusions are drawn. Within these limitations however, the following results appear. The mean gains on the four tests administered, Tressler's Minimum English Essentials, Hudelson's Typical Composition Ability Scale, Charters' Diagnostic Language Test, and Wilson's Language Error Test, show no significant difference between pupils instructed in large-size classes (38 to 42 pupils) and small-size classes (20 to 27 pupils).

The corollary to this would be that on the basis of informational tests the two teachers in this experiment carried a teaching schedule of six large classes as effectively as one of the six small ones.

Individuality and Individualism

By WILLIAM C. BAGLEY[3]

On a program devoted to the glorification of individuality it may not be out of place to remark that individuality and individualism are two different words. I should quite agree with the implication that the development of individuality, whether through guidance or in any other way, is an outstanding problem of American education. I am just as clearly convinced that an equally important problem of American education is to correct individualism, in so far as it may, the extreme and well-nigh pathological individualism that has come to dominate American life. It would not be difficult in a school program designed for the development of individuality to turn a group of learners into individualists as well. In fact, the tendency of American educational theory during the past thirty years has been precisely in this direction, and a serious task now confronting American education is the correction of this defect.

I shall not dwell at this time upon such expressions of an excessive individualism as are found in our heavy crime ratios, our high and steadily increasing divorce rates, and the wide prevalence of corruption in the body politic. Some of these phenomena I discussed at this Conference five years ago. The situation which was bad enough then is, in many ways, worse today. President Hoover has referred to it as the subsidence of our institutional foundations. And yet our profession, which of all professions should have been first to recognize the critical character of the situation and the first to consider seriously the fundamental problems that it involves, is still, metaphorically speaking, engaged in the pastime of chasing butterflies.

Leaving, then, for the time being the symptoms of an excessive individualism as revealed in the phenomena just named, I should like to discuss another set of phenomena which is symptomatic of the same national defect, although in a somewhat different way. A trustworthy student of economics told me not long ago that the development of power-driven and automatically controlled machinery in the United States has reached a point where every unit of the population could be fed, clothed, and sheltered with the factor of routine human labor so reduced that it would be almost negligible. According to his computations, a six-hour working day and a three-day working week would abundantly care for the material needs of our population. It is tragic that such a statement can be made with the assurance that it is very close to the truth, while at the same time

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hundreds of thousands of men, women, and children throughout the land are suffering for the bare necessities of life.

Ready to work for every man, woman, and child in the United States are the potential equivalents of thirty-five human slaves. The civilization of the new machine age will resemble the civilization of antiquity in the very important respect that it will be based upon slavery; it will differ from the older civilizations in that the slavery will be mechanical and not human; but in the end, the resemblances may prove more important than this single difference.

I have suggested that the thirty-five slaves which might be at the beck and call of each of us are just now potential rather than dynamic. They are there in terms of sources of power and in terms of machines either now constructed or in blue print. I am told that one of the great industries has machinery already designed which would enable it to double its output and at the same time to reduce its working personnel by one-half. To put this machinery into operation now would merely add another grand division to the army of the unemployed.

It is tragic that our economic system not only stands in the way of progress, but actually prevents the relief of human want and human suffering. It is tragic to know that the elevators are bulging with grain while hundreds of thousands of people lack sufficient food; that thousands of children need shoes and stockings and warm clothing when the warehouses are choked with goods of all kinds and descriptions; that men who ask nothing but the privilege of working are unable to find work because they cannot compete with machines.

It used to be comforting to a certain type of mind to believe that some persons were fit to be only hewers of wood or drawers of water. This belief gave to the sons of Mary a satisfactory excuse for throwing the heavy work and the routine work upon the shoulders of the sons of Martha. Today the wood-hewing and water-drawing analogy is quite without point or meaning. Power-driven machines can hew wood and draw water far more economically and effectively than can the strongest of the sons of Martha.

The machine is not only cheaper than the human worker; in a great many types of work it is far more accurate and dependable. It is said that in one of the automobile factories a huge machine was installed which automatically turned out a complete chassis in a surprisingly short time. The human element was almost entirely dispensed with. Indeed, it was in evidence only in a line of inspectors who watched the different processes to see that the machine did its work properly. Everything went well for a while, but on a certain day one of the inspectors, being human, overlooked a defect; and the

defect, passing unnoticed, damaged the automatic machine in a very costly way. It is characteristic of the machine age that when this particular machine was again ready for work the line of inspectors was not in evidence. Orders had been given to the engineers, and the engineers as usual had accomplished the impossible. An automatic inspector had been ordered—and an automatic inspector was delivered. It made no mistakes.

Most of the credit for making the machine age possible must go to the engineers, the technologists, and to the workers in pure science whose discoveries almost always condition advances in technology. Some of the credit must go to the organizer, the business man, who makes the work of the technologist effective on a large scale. Some of the credit, too, must go to the capitalist who risks his money.

For contributions to progress so substantial as those which the new machine age represents, each of these groups deserves its rewards. Few of us would begrudge the scientist, the technologist, the business organizer, and the capitalist the privilege of having a somewhat larger enjoyment of the fruits of this amazing development than the rest of us could or should claim. If, for example, I had lived under one of the older slave-civilizations, and if, at that time, a group of my fellow-citizens had offered to give me thirty-five slaves on condition that they should be permitted to retain, say, forty or fifty apiece for their share in capturing and enslaving the whole group, I certainly should not have thought it a bad arrangement. I am assuming, of course, that the slaves would have made it impossible for me to work as I had been working, but in as much as I could live on their labor much more substantially than I could live on my own labor, I should have been very generously disposed, I believe, toward those whose efforts had made all this possible.

How does the present economic dilemma differ from the problem that I have imagined as arising under one of the old slave civilizations? I cannot see that it differs in any essential way. Here we are with greatly improved methods of production which, by dispensing with the need of human labor and in many cases with the need even of human control, have left many of us without jobs. The new developments, however, are capable of feeding, clothing, and housing all of us, not only with comfort, but literally with luxury. No one of us should begrudge an extra slice to those whose genius has been responsible for the machine age, provided that we can all profit by it. And it is now fairly clear that, unless all can profit by it, no one will profit by it. The machine age is built upon the principle of mass production, but without mass consumption it is meaningless.

Our economic system as at present organized seems to have failed

lamentably on the side of distribution, and as a consequence mass consumption has fallen far short of mass production. The scientists, technologists, and engineers are many laps ahead of the economists and many more laps ahead of our erstwhile national heroes, the organizers of big business. It is fairly clear that there must be some fundamental changes in the economic system if the problem is to be solved. It is equally clear that the forces of organized education will have a part to play in bringing about these changes, for the development of the existing economic order has quite naturally developed a host of standards and ideals and prejudices, some of which at least must be radically changed if effective reforms are to be made in the economic system. This obviously is an educational problem which educators cannot too soon begin to study in a serious way.

The imminence of the problem may be most forcefully impressed by a brief reference to the astounding development that is now taking place in Russia. The Five-Year Plan, as we all know, calls for the complete industrialization of the Soviet Union by 1933. In view of the present plight of the industrialized nations, it may be wondered why the Soviet leaders should have deliberately planned for the Russian people a similar fate. The answer, of course, is fairly simple. The present plight of the Western nations is due, basically, to a faulty system of distribution. The evils of this system the Soviets believe they have corrected by accepting the communistic social order.

Let me return for a moment to the analogy between the machine age and the old slave civilizations. Ready to work for everyone living in our country, we said, are the potential equivalents of thirty-five human slaves; but we also suggested that, for most of us, this service is still only potential. With the completion of the Five-Year Plan, according to the Soviet prophecies, the mechanical slave ratio for the Russian people will be equal to ours if not greater; and it is the further prophecy that, when this time comes, the service of these mechanical slaves will be not only potential but dynamic. In other words, when the huge factories now approaching completion are in full blast; when the giant machine-worked farms are turning out foodstuffs in abundance; when the great dams have fully harnessed the power of the great rivers; when the coal and petroleum developments are completed: when all this happens, a system of distribution consonant with the magnitude of production will be ready. It will be the communistic system in which the factor of individual economic competition is eliminated and in which, according to the Soviet theory, the machines will be operated not to pile up profits but to serve the people.

Now we of the Western world often view the communistic

theory not only as utterly impracticable, but as entirely inconsistent with human nature. Personally I share this view in large measure. The ideal of personal economic responsibility, I believe, is an indispensable force in social life. Even the dour economic philosophy of Calvin Coolidge strikes a somewhat respondent chord in my own make-up for, like Mr. Coolidge, I was brought up in New England, and the fear dinned into my mind from earliest childhood was not so much the fear of going to hell as the fear of going to the poorhouse. I have ever since had a deep respect for the intuitive psychology of the later Puritans. The fear of hell might be dismissed as one approached the age of reason, but the poorhouse was always there. One could dismiss it no more than one could dismiss the railroad station or the village inn.

Can the steadying force of this ideal of personal economic responsibility be retained in a machine-slave civilization, the prospects of which are otherwise so alluring? Can the valuable elements in this ideal be kept alive, and can the morbid, cancerous growth of excessive individualism be cut away? This is only another way of asking whether the evils that inhere in the profits motive can be eliminated and the ideal of personal economic responsibility retained.

Will it be possible to keep rampant individualism within bounds? At any rate, this is a question that cannot be dodged much longer, and for a very good reason. Competent and dispassionate students of the Russian situation are agreed that at least a measurable success of the Five-Year Plan is highly probable. This plan is going forward now at a feverish pace and under heavy handicaps. By all accounts, the population as a whole is seriously underfed; shoes and other articles of clothing are difficult to obtain; the standard of living for the masses in Russia is still far below that which prevails even in the impoverished capitalistic nations of Western Europe. But all this is conceived of as the price that must be paid for an ultimate reward that will be more than sufficient to compensate for the suffering and the sacrifice. There are undoubtedly mutterings and murmurings of discontent; but the leaders have behind them the strength and power of the world's largest and probably best trained army. And they have behind them something far more powerful and permanent than an army. They may not succeed in indoctrinating all the members of the older generation, but they are taking no chances regarding the oncoming generation. Under an educational program far more effective than anything yet attempted in the Western world, communism with the young people has become something vastly more fundamental than a social or economic theory. It is a religion, and the success of the Five-Year Plan is its first goal.

George S. Counts has recently published a translation of a textbook on the Five-Year Plan that was prepared for Soviet children of junior high-school grade. It is a remarkable piece of writing, dramatizing the vast enterprise in militant metaphors. All Russia is at war, but not with a foreign country. The Russian people are conquering their own country. A chapter entitled "The Scouts and the Pioneers" tells of the work of the metallurgists and geologists in seeking new deposits of iron and coal and oil. Another chapter, "The March on the Kilometers," tells of the engineers and workmen who are pushing forward the new railroads. Still another, "The War on the Rivers," describes the construction of the great dams and the development of the hydroelectric stations. An introductory chapter, entitled "Two Countries," is a contrast of the United States with the Soviet Union under the full operation of the Five-Year Plan.

It would be the part of wisdom for every capitalistic nation to act now on the supposition that the Five-Year Plan will succeed, for even its relative success will inevitably turn the masses throughout the world toward the Left. If communism as a social philosophy is fundamentally fallacious, now is the time to counteract it; not, of course, by any attempt to check its development in Russia, for this would be both foolish and futile, but rather by the development of a rival plan which will aim to correct the evils of individualism and capitalism, to reconstruct the economic system in such a way that distribution will be adjusted to production, and to pave the way for a social order that will be able to profit by the machine-slave civilization without meeting the fate that civilizations based upon human slavery have sooner or later met in the past.

This last problem, also, seems to be the most serious of all. It will be as serious a problem for communism as for industrialized democracy. Until its ideals are achieved, the Five-Year Plan operates as a tremendously powerful disciplinary force, a steadying influence which, for the time being, is doubtless far more powerful than is the steadying and disciplinary influence of the ideal of personal economic responsibility in the capitalistic nations. But what will be the situation if and when the Five-Year Plan succeeds? What will happen when the Russian workmen can live in comfort and even in some degree of luxury with a six-hour day and a three-day week?

The light which history throws upon this problem is not at all encouraging. Groups, whether large or small, that have been able to live without labor have as a rule descended pretty swiftly into Avernus. "Ceaseless and inevitable struggle and competition; ceaseless and inevitable selection and rejection; ceaseless and inevitable

progress": these seem to have been hitherto the primary factors of social evolution, as they have been throughout the ages the primary factors of biological evolution. Can social evolution dispense with these factors even though human societies may be able for a few generations to live pretty comfortably without them?

It is perhaps at this point that education can help most to solve the problem. To my mind the most feasible solution would seem to lie first in the development of occupational opportunities on the non-routine levels, a process that was going on apace before the panic of 1929, and a process which will be resumed, no doubt, as the economic stress is reduced. This means, at basis, the development of a large number of human callings into professions or semi-professions. Here the task of education seems pretty clearly indicated.

There can be no doubt, however, that the immediate future will demand a fundamental tempering of the spirit of individualism. As a recent writer has said:

> The next stage of human development cannot possibly retain laissez faire economics. It must be an age of . . . balance, order, and discipline, of co-operation within nations and between nations. It is for America to work out the solution . . . by preserving the best features of individual initiative and yet gaining the advantages of collective effort. To solve this problem, the ideal of service must, at times, be accepted in lieu of economic reward. To keep the leadership in world affairs, Americans must bring into play . . . the intelligence of scientists and the sympathy of poets.[4]

The author is in no sense a radical, but he speaks from an intimate acquaintance with the Russian situation and the factors that have brought it about. His views are shared by other quite conservative students of the problem.

In the process of tempering the spirit of individualism and of placing the ideal of service in a position to compete successfully with the ideal of economic reward, education must play an important part. What it can do to mediate these ends is not to be determined by personal judgment but by the responsible councils of our profession. My purpose is not to suggest a program, but rather to suggest the importance of recognizing the problem and the importance of setting in motion without delay the machinery that will lead to an adequate analysis of the problem and the formulation of a program or of several alternative programs looking toward its solution.

[4] Hopper, B. *Pan Sovietism*, p. 287.

Our New Curriculum in Home Economics

By JESSIE WINCHELL[1]

THE STORY OF THE PROGRAM OF CURRICULAR revision at Rochester is the report of some six or more years of work on the part of the teaching and supervisory force of the Rochester public schools. The report of the Survey published in 1928 has been the basis for the development of the new curriculums. Courses of study for each age-level for all subjects and for special groupings are now in experimental form. Because these courses have not been in operation long enough nor under sufficiently ideal conditions to prove their value objectively, it is impossible to attempt to evaluate the effectiveness of each course.

The revision of the home-economics course of study was not begun until two years after the work on other courses was commenced, primarily because no director of home-economics education had been appointed. The director was appointed and commenced work at Rochester in September, 1928, but not until the second half of that year was any work of curricular revision in home-economics education attempted.

During the spring term, 1928–29, a class was organized in Curriculum Revision in Home Economics under the Extension Division of the University of Rochester with Cora M. Winchell, of Teachers College, Columbia University, as the instructor. The class met Saturday mornings for two hours. Ninety-two members included seven-eighths of the total number of home-economics teachers in the city. Other registrants were special-class teachers and supervisors, art supervisors, principals, and health-education teachers.

Some members of the class joined committee groups making special studies which would help interpret students' needs at Rochester which home-economics content might hope to satisfy. Because of time limitations, these investigations were incomplete, but they point the way to more detailed study. Such studies as the following were among those made at this time.

1. Study of elementary-school "attendance span" as basis for determining type of home-living courses desirable in different localities.

[1] Rochester, New York.

2. Vocational opportunities for girls in homes and industries at Rochester, including study of possible co-operation between schools and employment agencies and employer.
3. Values in trends of satisfaction in lives of girls and boys in home activities.
4. Study of present activities of girls who were graduated the last two years.
5. A study of senior high-school boys and girls in relation to home life.
6. Scientific background needed by home-economics content.
7. Art background needed by home-economics content.
8. Study of course content of pre-school, kindergarten, and first six grades for the purpose of suggesting enrichment of present class work through activities connected with food, clothing, and other materials in general use, and of promoting integration of existing content through practical activities designed to develop desirable attitudes, appreciation, knowledges, practices, and simple skills.
9. Analysis of general curriculum of the schools at Rochester in terms of the contribution of subjects other than home economics in education for personal and home activities in food, clothing, and home life.
10. Study of textbooks, reference books, and illustrative material in various types of home-economics classes.
11. Study of teaching materials in home economics available through museums, industrial plants, stores, and municipal institutions at Rochester.
12. Proposals for equipment for teaching home economics in schools including home-economics cottages.
13. Studies of the opinions of parents who have studied home economics and who have daughters now enrolled in home-economics classes concerning desirable content of the home-economics course.

Paralleling the work of these committees, tentative outlines of home-economics courses for each age-level and for each particular group in the Rochester schools were formulated by committees of teachers, most of whom were class members. The chairmen of these committees were released one half-day a week. This was made possible under the curriculum-revision program. An effort was made in the course to check and to evaluate the Rochester home-economics course of study as well as the new tentative course of study in the light of study findings. In June, 1929, every home-economics teacher was given the complete home-economics course together with committee reports of the specific studies.

The class in Curriculum Construction in Home Economics at Teachers College, Columbia, during the summer session of 1929 analyzed the tentative course of study for home economics for Rochester. They made careful analyses of the various studies, and of the course of study as a whole. The director of home-economics

education at Rochester met this class as a group and in individual committees for a four-day conference to classify uncertain points. The suggestions and criticisms upon the course of study developed by the class were submitted to the home-economics teachers at Rochester.

In the fall of 1929 one of the home-economics teachers who had distinguished herself through committee work of the preceding year, was released for full-time work on curriculum revision. The tentative home-economics course of study with comments and suggestions from the class at Teachers College was in the hands of every home-economics teacher for trial. Teachers were requested to follow the course as far as seemed feasible. Complete records were to be kept of all changes made. Twice during the year, general and specific suggestions based upon the changes recommended after several months of trial were sent to committees working on various age-levels.

All home-economics teachers of the city served on committees dealing with the age-level with which they had major contact. Committees met every other week for one hour. They worked over the course of study for each age-level considering suggestions made by the class at Teachers College, by Rochester home-economics teachers working on the course, and by classes of students who were asked to advise. Finally, these committees organized each age-level course into a form which would meet the needs not only of the pupils and of the home-economics teachers, but of the central committee.

The work of the individual released for home-economics curricular revision was indispensable in the unification of the work of all of these committees. She submitted outline guides for the use of Curriculum Revision Committees in order to insure uniformity. She made a special study of the longitudinal growth of home-economics content throughout the entire course. She considered the overlapping of home-economics subject-matter with that of other subjects and vice versa. She conferred with other departments upon the advisable degree of overlapping, and considered with them which should assume responsibility of prime emphasis.

The next step was that of preparing the entire course in a form which would meet the approval of the Central Educational Committee. The Director of Curriculum Revision and Research assisted in the final review and approval of the course of study as it stands.

The program of curricular revision for the year is that primarily of experimentation and articulation. The home-economics curriculum will be in the hands of all directors, principals, practical-arts supervisors in junior high schools and libraries in addition to all

home-economics teachers at the close of this year. The curriculum is being followed in all schools. Adjustments and adaptations are made where advisable when agreed upon in conference with director and supervisor in charge of curriculum. Class work is being observed, and the work is being discussed and evaluated with teachers. Records of lesson suggestions are being kept by teachers on work sheets of the course. The close of this year must again see a reorganization of curricular content based upon the recommendation of teachers and principals, and changes must be made in time allotment and program scheduling in the city.

A program for assisting the home-economics teachers in carrying out the course of study was promoted during this school year. Demonstrations in food preparation and serving were given to home-economics classes in elementary schools, junior and senior high schools, evening schools, and continuation schools by one of the supervisors admirably fitted for this work. Five two-hour evening demonstrations were given to 60 home-economics teachers. The aims of this work were: (1) to demonstrate the most up-to-date methods of food preparation, (2) to show the use of the demonstration as a method of effective teaching of home-economics content under difficult existing conditions, (3) to set standards of work for teachers as well as pupils, and (4) to demonstrate the value of the well-planned lesson in home economics. Demonstrations on clothing selection and construction and the clothing budget have been given junior and senior high-school girls by a specially trained home-economics teacher.

A university class in Child Development Especially Adapted to Home-Economics Teachers, offering two-points credit, was organized. The director of home-economics education at Rochester was the instructor in charge and taught part of the work. The course was enriched by the contribution of the director of parental education and specialists in children's clothing and feeding. Fifty home-economics teachers, special-education teachers, and nutritionists were enrolled. Ten mothers were in regular attendance to help check upon and evaluate theories in the light of practical experience. Departmental meetings and meetings of the local Home Economics Association, together with other community programs made available for home-economics teachers, have all helped in the installation of our new course of study through offering practical help in a variety of fields of education.

Since there were so many variables, controlled experiments with the home-economics course of study in the Rochester schools were not attempted this year, and no objective tests to help evaluate the

course were given. The problem of effective installation of the home-economics course at Rochester lies before us. We recognize the risks of "overproduction and underinstallation" as cited by Mr. Hopkins in his book *Curriculum Principles and Practices*, and we shall make every effort to move cautiously so as to insure a satisfactory installation of our course of study, and at the same time we shall hope for a gratifying articulation of home-economics courses into the entire educational program of the Rochester public schools.

Education for Home and Family Life

By ERNEST R. GROVES[2]

"Education for Home and Family Life" would have seemed, not so many years ago, a strange topic for educational consideration. What a ridiculous thing it is that topics concerning the family ever should have been left out of educational discussion. The fact that practices have changed reveals how much has happened in recent years and how much more sensitive education is to its obligations. Almost a revolution has started, the full meaning of which has certainly not yet appeared. It is probably the most hopeful thing that has occurred, more important than our inventions and our applied sciences, because it makes possible the use of our resources. The topic is just a little indication of that tremendous change, showing that education at every point is becoming sensitive to social needs. The interest in parental education is just one illustration of the change of attitude that covers the entire field of education.

What is the full meaning of this change? Why have we been adding new things to our schools? Why are we beginning to talk about socializing education? Why are we concerned with human problems? Is it not because, at last, we are beginning to demand that education bring us human happiness? Such a statement years ago would have led to controversy. People would have recoiled against the word "happiness." They would have thought of it as representing a rather low attitude toward education. But how vast the change! Human nature has at last turned itself from painful experiences, and at every point is demanding that it live a human life of the greatest possible pleasure and happiness. It was due to come. It was postponed by the feebleness of man's resources, the inability to put into practice even the information at hand. A philosophy of life, particularly a theology of life, had been built up that

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excused men from doing with the earthly experience the one thing that was morally demanded of them; and they are only beginning to realize that, as they put themselves into this task of using present opportunity and of taking from life every limitation that science can remove, use can be made of education to give the greatest possible satisfaction. Everything is criticized nowadays; nothing is held sacred. Man at last has realized that it is his business to be happy, that this is what he was born for, that his success in life must be estimated by his ability to make good use of the environment he has.

The entire future of the family, humanly speaking, depends absolutely on its ability to bring to individuals the human happiness they crave in certain elements of their experience. The family cannot be supported by legislation. It will fade away if it has to be given its nutrition by any sense of obligation. It must prove itself by giving human beings, in one department of their lives, supreme satisfaction, and in so far as it fails, it becomes weakened, is easily repudiated, and cast aside for other things and other forms of experience related to the major purpose of family life. Thoughtful people are beginning to realize that this old institution, the family, must have new support if it is to give to man what he desperately needs.

Not so long since family life was considered by many to be a penalty—an obligation, perhaps they would have said. A man was caught by passion, which he idealized; he painted in colorful hues all of his supreme desires, the most captivating thoughts of his life, and pointed them to family experience. He was legislated into that kind of life and then often found, or seemed to find, that he had been deceived. His ideals slipped away, and the bright day that he faced with such vitality became gray duty; he heard preachments from every side that this was the human destiny; that he asked too much; that he should have expected to find himself stranded, no longer fed by his ideals, but obligated to carry the burden. That old notion was embedded in man's thoughts, just as it has permeated Christianity almost from the beginning, but it is slipping away. The young man of today is as far away from sympathy with that sort of thinking as the East is from the West. Such thinking has passed, and the family, if it must maintain itself on such a basis, will be shattered. If the institution cannot be supported by achievement in human satisfactions, then, indeed, man will have to look elsewhere to find some other way of taking care of one of the major interests of his life.

The educator thinks the trouble in recent years has been that absolutely no effort has been made to help people to be happy in

their married or family life. He looks out upon a world where nearly all successes have come from preparation. He is familiar with the fact that man, to prosper in any vocation or any activity, must have training. Naturally, then, he assumes that if man is to have satisfying family life, he must be trained for it. It must be included in his education; and so, everywhere—in church life, in school life, in college—there is just a little indication that more and more education will help the family.

More education is needed than can be gained from incidental help. It may be true that the Latin teacher or the teacher of geometry, or somebody else who deals in any one of the by-products, will be able occasionally to say something that will be of value to the family, but that is a meager service. Instruction is needed that will be practical, simple, direct, and effective in dealing with this problem.

That sort of instruction must be furnished. The sociologist and the teacher of home economics are both at work, and, from rather different points of view, each of them, as far as college is concerned, is doing his part. In the high school, of course, for the most part, the burden falls upon the teacher of home economics, and it is a splendid thing that here and there in the South and in the Middle West, commonly in the very far West, instruction in family relationships is given in the schools.

There are two parts to the problem which must be distinguished, building up attitudes and giving information. The harder of the two is to build up attitudes, for instruction must be indirect and subtle, through the influence of personality, and born of conviction. The unhappy person in a family cannot help, and the person who has little family life is handicapped in such teaching. The attitude to a large extent comes out of experience. More and more we are learning to handle problems of emotions consciously and precisely, and without any question, skill will develop that will permit the well-trained teacher, in spite of any personal handicap she may have in her experience, to do much in building up proper attitudes to work, marriage, and family life.

Some have been interested to note that those who have become particularly involved in this work in high school and who are unmarried are likely to marry, and those who have given their thought to parenthood more and more seem to look forward to the time when they can be parents. Certainly, this encourages the belief that the values which this particular human experience represents may be emphasized to such a degree that people will come to believe that no one tastes the full flavor of life who cannot have

the happy experience of marriage and the revealing experience of parenthood with the give and take of family life.

The second part of the problem is easier, and here progress is being made rapidly. This part of the problem is to bring forth information and knowledge of the facts that concern this particular experience, so that when the young man or woman is married and has children, he or she will have the background at least to realize the difficulties and the possibilities of the experience. It may be possible as well to provide resources to deal with those problems, or at least an understanding of how those problems can be dealt with in accord with science. Attitudes and knowledge—one a point of view and the other a body of information—are necessary in the high-school period. All of the experiences that are involved in married life cannot be anticipated, but an attitude and a sympathy toward knowledge can be developed upon which the individual may fall back just as soon as the occasion arises in which new knowledge is demanded. Family life desperately needs the sort of thing that is coming so rapidly in education.

Our family life has lost the advantage it once had of a routine that was in itself educational. When the family life of this country crossed the Allegheny Mountains and came into this section, the Northwest Territory, it had connected with it the most efficient life preparation that ever has gathered about the family. It carried the keen sense of responsibility under hardship, the willingness to co-operate that the family had already shown in the eastern colonies, but added to it was a more genial, kindly, human attitude that had gathered about the people of the southern seaboard. It was efficient and human. I do not wonder that out of it came so many distinguished persons, and that it had the compelling influence in American history that it certainly did have. As we now look back upon it, we see that the big dramatic crises were under the control of western decision. It was a wonderful family life. You may say it was hard and narrow and sometimes coarse. It was, indeed, and under the circumstances it had to be, but it was wonderfully efficient, and the men and the women coming out of that atmosphere were prepared under the circumstances of that time for family life. It came out of the childhood training, out of the co-operative contact of cultural struggle. But such family life has almost passed away. There has been a turn in power.

The urban center, which now dominates, brings about an entirely different situation. During the White House Conference, Mr. Sanderson, of Cornell, worked out for one of the committees a study of the conditions of city life and the effect of density of popu-

lation upon the family. He proved by his study what he knew before he started, and what all the rest of us knew, that city life was hostile to the welfare of family life. In his conclusion he also said that this might not be a permanent state of affairs, that it might only mean a transitional stage wherein the family is passing from its form in a rural society to a different sort of career. I do not believe that the density of population or city life in itself gives a clue to what is happening. Its general meaning is that in the city science has been carried to its extreme expression; modern culture is everywhere. The mere crowding of people is incidental. Science can thrive in the city in a way it cannot in more dispersed population groups. The question is, Can the family transfer itself from such an environment as it once had in the Northwest Territory, where it was naturally strengthened by social conditions, to one where the culture is of a different sort and where applied science goes beyond even the dreaming of people of the nineteenth century?

Whether it can do it, or whether it will do it, of course, will depend upon the assistance it has. Family life can thrive upon a routine like almost everything else, but it must have special support and particular protection. This is familiarly known in citizenship, and it is true even in health. The realization that it is true in vocations is growing, and it must not be thought strange that the same is true of the family. Everything that is to flourish in modern society must be supported by special education. Society cannot depend upon the parents alone in their special relationships; it must be the care of somebody who takes a particular interest, who deals with a special knowledge, and who will bring it in available form to those who have need of it. Perhaps it is the first time since man walked the earth that the family life has not been supported by the mere routine of life.

The second factor in satisfactory family life is that the family relationship is more strained than it used to be. The normal human being today is asking more of life than his father and mother or his grandparents did. He is demanding things because he has become increasingly sensitive to his needs. He questions conditions that do not bring him human satisfaction. He is determined to have a happier life. He lives a happier life now, and he insists upon that as the normal thing, and he is absolutely right. It is a shameful fact that man has waited so long to realize the human need of happiness.

People now enter marriage with expectations that are beyond those of former times, but they have less tolerance for any disappointment. Sometimes they frighten us older folks, they are so

impatient, and we who counsel them try our best to make them more willing to wait until they can achieve their happiness. We warn them that they must not demand quick returns from marriage. We know that if they make quick decisions, sometimes they will have decided too soon that their marriage has failed. We deal with them in this manner as individuals, but when we instruct them and treat them in groups, we have to admit that there has never been a more important thing for the family than this great sensitiveness to unhappy conditions. We are glad that the time has come when no church or government can hold together anywhere for any length of time people who are unhappy, that more and more people repudiate unhappy family life. We welcome the change, because we are sure that an unhappy family life cannot be a good one. We know that public opinion in the past has kept together, as far as living in the same house is concerned, persons who were unhappy; but we know the moment that coercion took the place of affection, that instant the family died and its place was taken by mere shell. Most of us are not at all frightened that young people are determined to have the essence of family life, even though sometimes they are impatient; and that is what I mean by greater strain. They are asking us to prove our case. We talk about the family as the great human institution that has come to bring great satisfactions. It is the best method human nature has discovered for dealing with some of the most important things in human life. Then if that be true, they say, why should we not recognize failure and refuse to abide by our unfortunate decision? In England and Germany this idea shows itself in divorce; in Italy in the inability to enforce marriage; in India and Turkey you find it in a restlessness that is demanding, much like our own life, greater human satisfaction. The whole world is sensitive to this, which means that marriage and family experience have gone to the bar of judgment.

Some radical writers are not only saying that the family ought to go, but one of the great psychologists has said that twenty years from now we will have no marriage and no family life. I think he is destined to a great disappointment, if I read the tendency aright. We have enough functions left for the family, certainly, almost a dangerous quantity still. None of the essential elements that make the family has disappeared. The family is not made by the sewing machine, and if the kitchen should go, the family would still stay; and if the child should go a good part of his time, the family would still stay, providing the child did not go elsewhere, as he will not.

Competition is taking away from the family things it cannot do

so well as other people, or things that it cannot be safely trusted to handle entirely. It is a fortunate fact that marriage and family life, as institutions, are in competition. There are experimental experiences already trying to do the thing that marriage and family life have done. There are persons who say that we can get the satisfactions under other schemes better than under the present institutions of the family. In other words, they say the family, and particularly marriage, has outlived its usefulness. How much of such practice there is, no one knows, but one must recognize that these opinions are not all talk nor writing, that there are persons who are trying the idea of Bertrand Russell, for instance, and others who have gone beyond that in their radical behavior. One, however, has to pass judgment on a little experience. Personally, I am convinced that none of these schemes work as well as the orthodox experience of marriage. I try to be open-minded, but never yet have I known personally any one of these attempts that has not ended in disaster. In any attempt to educate the younger members of society for marriage and family life one will encounter such obstacles as prejudice. Parents, particularly, are too well satisfied with the past to want to make changes, and when they find out that educators are talking about family life, they get worried, especially if they find, as often they will, that what is taught is not in accord with their practices. If what is taught is in harmony with the parents' ideas, it will often only show that no advance is being made.

A second obstacle will be the fear of parents that the knowledge given will make trouble. It is amazing that so many right-minded people are afraid of knowledge and not at all concerned about ignorance; they believe that out of knowledge rather than ignorance come the moral conflicts that they wish to spare their children.

A third obstacle to be encountered is the insistence that the opportunity of instruction be used to reinforce the things as they are. We shall be thought of as a protection against present circumstances. For every troublesome thing the educator will be asked to furnish an antidote. This will simply be a part of the general attitude taken toward education. People are so afraid that the defenses of society will break at some point that they ask instruction merely to anchor what is. Educators cannot comply in this particular and accomplish what they are trying to do. They must prepare for change; and not ally themselves with those who are attempting to make man content with the present practices.

As educators we believe in marriage and in family life, but we do not believe in marriage as our fathers and our mothers knew it, and we do not expect family life to be that of our grandparents.

We look forward, rather than back, and refuse to talk about yesterdays when we must speak of the tomorrows. At present we chiefly stress adjustment problems, human relationships, money matters, and especially courtship. It is these problems that test us. If we avoid them, we have almost no influence. Young people test us by finding out how keen we are to present situations, how just we are, and how clear we are. If they find that we are untrustworthy with their particular problems of the moment, mostly courtship, then they discount nearly everything we say. That is the test. That is perfectly proper, because courtship becomes an organic part of married life once marriage occurs, and if we are not definite and just in our judgment of what the young person experiences, how can he trust us regarding things he does not yet know?

A big problem that we cannot handle to any great extent as yet is the problem of sex. We can do a little that the next generation may have a start, for the time will come when sex will be treated like everything else that is human, and there will be a fund of knowledge as precise and as useful as is, for instance, the science today which deals with agriculture. It is of great importance although perhaps exaggerated by some. In this matter of great importance to human life there is and has been great ignorance, and we will do what we can. We recognize, however, that we must not go too fast here, for it simply cannot be rushed in most of our high schools. Fortunately, we can try through the high school.

It is pathetic that there are so many unhappily married young people. When you find desperately unhappy people who are supposedly happy, unless you have good judgment, you lose all confidence, because you do not, of course, realize how many happy married people there are. Marriage is more important for happiness than anything else that occurs in life, and therefore it should be the most successful. Education must not only teach, but it must practice. I trust we will not have in our high schools people teaching family relationships under the handicap of such a regulation as we have in Boston, for instance, possibly in Chicago still, that no married teacher can teach in the high schools. I trust the inconsistency of that will be clear. I hope we never will have universities, known throughout the land for the good work they do in child care and family relationships, functioning under a state law that says as soon as a woman marries she must cease teaching. In other words, I hope all along the line we will see that education must not only instruct in family relationships, but that it must function consistently with human welfare along lines of family experience.

The Industrial Teacher in a Comprehensive Guidance Program

By HAROLD L. HOLBROOK[1]

YEARS AGO AT THE BEGINNING of a university summer course in guidance, one of my students came to me greatly perplexed. She was the head of a home-economics department in a large city high school. Guidance in her school was thereafter apparently to be the work of the head of the commercial department, who had recently been made vocational counselor. Our friend of the home-economics department felt that if counseling were to be taken away from her, there was just one thing for her to do, and that was for her to become a counselor herself in any school where she might have an opportunity. There she might continue to share the plans of her girls, having them come to her as their confidante, and feeling when these girls went out into life, many of them into homes of their own, that she had a place in the firesides of this newer generation. These things seemed to be about all that made life worth while to her. Of course, she had a wrong notion about this matter of school-guidance counseling. We must admit, though, that the counseling in her school, as in too many others, did start out in the way she outlined, with many industrial instructors and other teachers reacting accordingly.

Today we have a much broader interpretation of guidance. In the first place, we consider school guidance as having to do with all the objectives of public-school education. In brief, school counseling is one phase of education which seeks to bring our mass education into the range of pupils' adjustments. We have as many kinds of guidance as there are objectives in education and in addition educational guidance. Each kind of guidance cross-sections each other kind of guidance. We can express any objective in education in terms of guidance, and think of that as covering the other kinds of guidance. We can say, for example, that vocational guidance has to do with health, worthy use of leisure, worthy home membership, citizenship, and so on. We must think of guidance as being the concern of each teacher, certainly including the industrial teacher.

[1] Pennsylvania Department of Public Instruction.

School subjects may for convenience be arranged in five main groups: the fine arts, the practical arts, the biological sciences, the social sciences, and the physical sciences. The sequence is of no moment. Any school properly taught offers a vocational-guidance experience for the reason that any subject properly taught is taught as an interpretation of life: vocational, avocational, social life. Having the child point his face at page 43 in the geography or history text and say it back to the teacher after fifteen minutes is not the measure of teaching. Nor is the ability to say page 43 back to the teacher the true measure of educational achievement, even though it means an "A" on the report card. The child must get the vision and the feel of the life represented in that subject; for each of the subjects has a firing line out yonder today making history in the arts or the sciences, carrying this world of ours into new realms, new heights of achievement, and everyday life. You cannot expect the boy or girl to get a thrill or challenge from a teacher who himself fails to get a thrill and a challenge from the subject he is there to interpret.

Because of the economic place of the vocation in our world of work and service the vocational implications of all subjects are outstanding. Some of you come from unit trade shops. Others are junior and senior high-school teachers on what you probably term a practical-arts basis. We are not considering here the differences among you, but rather the common contribution that you have as representatives of your fields, for the schools and community you serve.

Teachers have an important place in the counseling program of a school. School guidance counselors cannot possibly know intelligently the twenty thousand more or less pay-roll jobs enumerated by the "Index of Occupations" of the United States Census. The fully equipped instructor, having contact with the vocational fields represented by his subject, may well be part of the counseling staff of that school. Yet even here we are handicapped. The fine-arts teacher cannot be a professional artist in all the fields represented, nor can the shop or mechanical-drawing instructor have come to the practical-arts division with experience in all the fields that should be represented there. Art in the community, however, may have men and women of the right sort who do have a valuable experience and point of view in their occupations. The same applies for the industries.

The counseling service, to be more nearly complete, must take in the community as well as the school, not only for vocational guidance to which we have referred but for other kinds of guidance as well. Key men and women often come to the school to speak before the assembled pupils concerning the fields they represent. This, however, is not enough. Through the right kind of school

organization for guidance, arrangements may be made for certain children, singly or in groups, to consult with these specialists at their places of work. The contacts thus made may often later mean a place in which to work. Institutions of higher education are represented in most communities. They can do much to make college and technical-school experience meaningful through conferences and through photographs, announcements, banners, and other visual aids for bringing the college and the training school to the school libraries and bulletin boards. Then there is the matter of scholarships, health, recreation, and other social service for the child who is worthy or in need.

Theoretically, all teachers are on the same basis with regard to the interpretation of their subjects in terms of life. As a matter of fact, however, there is considerable difference in them. The shop instructor comes to the classroom with years of contact with plants and laboratories represented in his field. How is it with other teachers? Has the geography teacher traveled in the countries she discusses? Does she herself feel and vision the thing she would interpret: the tropical river, the oriental city teeming with nondescript humans, the mountains of Pennsylvania or of Alaska? Does the science teacher come from the world laboratories of that science: the General Electric, DuPont, your Ohio automobile and tire plants, or the great medical laboratories?

The industrial instructor has a decided advantage in terms of vocational guidance. Whether or not he utilizes this advantage is another matter. I know, and you know, many shop instructors who go over the same projects year after year without giving the pupils a vision of the vocations represented. We know English teachers and science teachers with much less practical experience than ours who are making their fields challengingly interesting in terms of the world's work. After all, though much depends upon a teacher's practical experience, even more depends upon the extent to which that teacher is able to share his experiences with the pupil and to help the pupil learn from the experiences of others.

The industrial teacher has every need to enlarge his community contacts. He may be the only practical-arts teacher in the school. If this is so, remember that he is representing in that school as far as possible the entire field of practical arts. It is to him that the guidance counselor should go for the interpretation of the practical-arts vocations. It is to him he may well go for aid in making contacts with industrial community advisers of boys and girls.

I would have you as a group think of your guidance service as

one ranging the entire field of practical arts, with your ambition for information unsatisfied until you know what the key vocations are and the three things concerning them: what the worker does, what the work offers, and what the work requires.

We can only touch upon techniques. Let us for a moment analyze the matter of occupations. The census classification of nine occupational fields is faulty for our purposes, since trade is considered as commerce and home-making is left out of the picture. An analysis that utilizes the statistics offered under those nine census fields and brings us down to a practicable five main fields is found in agriculture, business, industry, home-making, and professions, each with its allied services. Again we may cross these five main fields and allied services in terms of vocational-training levels, just as though we set up these five main fields as short pillars and at the foot of each placed a three-tread stepladder. For the first, little-skill training level we may combine unskilled workers, machine operators, and other semi-skilled workers. The second tread offers us the skilled-training level. The third tread we may call the science-training level. It includes, of course, manufacturing and other administrative as well as professional work.

Public-school teachers deal with potential workers of all three training levels, and therein lies one of the problems confronting the shop teacher. I have been in many discussions of shop teachers in which we quite agreed that skilled trades have a place for the boy with a high intelligence quotient, and that in these trades lies his greatest opportunity. That may or may not be true, depending upon other measures than the intelligence quotient. Personally, I see things from several points of view. Suppose a boy is interested in mechanical things, particularly metal, and of his own volition has equipped his corner of the cellar or garage with a tool chest, bench, and kit all his own. Should he be a machine operator on the little-skilled training level, should he be a skilled mechanic, machinist let us say, or should he be a mechanical engineer? There is no sharp dividing line for these training levels. You and I know that some so-called "skilled trades" require less skill and knowledge than some other lines of work having to do with the operation of a single machine. Again, while we may say that an I.Q. of 100 with a tremendous amount of determination may see a boy through college and into successful work on a college level, there are boys with a considerably higher intelligence rating who have not the stamina to go on in college. We cannot settle this matter on any single measure of ability. There is not time here to go far into the backgrounds of this problem of techniques. I would say, however, that this matter

of individual differences in the last analysis simmers down to human traits; these traits may be arranged in three groups—general-intelligence traits, special-interest and aptitude traits, and character and personality traits. Academic ability lies largely in the field of so-called "general intelligence," and both general intelligence and academic ability are based more than they should be upon rote memory. The boy who has relatively poor memory ability may be unsuccessful in attaining the academic high-school and higher technical training for work on a professional level. He may, however, do outstanding things in business and industry. He may build theory through richer sensory experiences than the school offered, and ultimately climb into the science-training level of achievement. The shop teacher has a part in developing cumulative guidance records, and in using various tests and analyses of individual differences included in a comprehensive plan of guidance.

The vocation has a place in shop talks as many of you realize. A certain portion of this whole range of twenty thousand pay-roll jobs is represented in the field of practical arts; a certain group you, as a teacher, are in school to interpret. If you are the only industrial teacher in a school you have, as I see it, the responsibility for practical interpretation of the whole field of industries. It is this responsibility which the general shop seeks to meet. If you are one of several shop teachers, there should be such correlation among you as to have the field adequately covered. Shop materials, processes, and projects may well contribute to this interpretation of vocations.

Most of us as teachers take our special subjects rather seriously; we measure children too largely by the work they do in our classes. The boy who does outstandingly well there may be just the one who needs our guidance most. Take, for example, Lysle Bodie. I had Lysle as a pupil in seventh-grade manual training, a boy who was designing a steam engine large enough to run a lathe and building it while other boys were beginning mechanical drawing. He was tremendously interested in his work, and I found time to help him out of class, for he interested me. I visited his home and found a city apartment kitchen divided in half by a railing. In the part for the boy was a small machine lathe and numerous other pieces of shop equipment. Lysle had every mark of genius, roaming the shops and laboratories of the Oakland district with the latchstring out for him almost anywhere. He was a boy of ideas, and when these came to him, whether it was for a steam engine, an electric motor, or a gas engine, he could not rest until he had the idea on paper and the project under construction. Compared to the possibilities in these

fields, English grammar and other academic subjects seemed so insignificant as to belong to some other world. It took time and effort on my part to steady Lysle, to make him realize the importance of these academic subjects if he was to go to Carnegie Institute of Technology over there across the ravine. The next year or two passed. I went to a downtown office of my own, and Lysle went to high school. He still had his visions, and academic work seemed too little worth while. And then the unbalance of adolescence came into the picture to complicate matters further. One morning the folks of Pittsburgh read that Lysle Bodie had taken his father's revolver out into Schenley Park and blown out his brains. Your problem, teachers, ranges all the way from the boy who must be encouraged to give mechanical work all the stuff he has got to the boy to whom the industrial teacher can point out the need for more time on academic subjects, if he is to realize his ambition for technical training.

Knowing whether or not the boy does well in your class is but a small part of your responsibility. Know the lad from the point of view of general intelligence as measured by academic school work; know something of his special interests and aptitudes as expressed in your own work and elsewhere; come to know the boy's possibilities in character and personality.

With a vision of the world's work in terms of the field you represent, the educational preparation required, and how this preparation may be obtained, and with a knowledge of boys in terms of all three groups of traits, you may justly take your place as a member of your school counseling staff.

Your practical background has possibilities for guidance leadership. Your progress upward from the little-skill work of an embryo apprentice through trade-training into the science-training level will give you an insight into the possibilities of training-level progression —the high-school and college approach to the science-training level, and the shop and night- or correspondence-school approach to that level. Many of you have sufficient vision now. To challenge the co-operation of other teachers, however, you must see education from the point of view of their fields as well as your own. You must have a vision of all five major fields of education in terms of life.

I have tried to place before you some of your guidance possibilities as industrial teachers. From that we have come logically to your place on the school counseling staff. Your future as a guidance leader above all things depends upon training, educational vision, the balance with which you can view each objective in education in relation to the others, and the extent to which you can inspire the help of all concerned: pupils, teachers, principal, and community.

Individuality through Guidance in Industry

By R. W. JENKINS[2]

THERE IS PLENTY OF FOOD FOR THOUGHT in trying to decide just what we mean when we use the term "individuality." A noted writer has said that individuality is the character or property appropriate or peculiar to an individual. It is that quality which distinguishes one person or thing from another: the sum of character traits. Biologists tell us that we are highly individualized and that individuality is not the simple something which many people assume it to be.

Personality is the name for that total working together of forces in an individual for the achievement of his peculiar objectives. This definition indicates that personality is always in the making, and that a person should continuously work toward an effective integration of activities. In industry, no one can be a leader unless he can "sell" himself to others, and he can do this only through a conscious individuality and a developed personality.

In discussing the meaning of the term "guidance," I am leaning somewhat on Mr. Stone and Mr. Lewis, each of Ohio State University, who have done some careful thinking and writing on guidance. Today progress seems to be one of our fundamental urges in industry. We crave activity and more activity, especially in the form of production orders. To meet this urge to produce, we have a few foremen left in industry who feel that the best way to guide a worker is to drive him. Then there are many foremen who do more guidance by creative leading. To guide means to direct, to lead, to conduct, to regulate, and to steer. A foreman directs the work of his men. A conference leader leads the discussions. A foreman conducts his department in a businesslike manner. He regulates the flow of the product through his department. His workman steers the truck, loaded with castings, along the narrow walk. A good foreman will guide his workmen so they will learn how to do the various jobs in the department. To guide really means to help a person find his way or to make progress along some line of work or endeavor.

Most of us are faced with the choice of an occupation. Many workmen make the choice several times before they are satisfied with their lot. Then, too, inventions, improvements, and ill health may make adjustments necessary. If the individuality of a person is developed sufficiently so that it can be used in making the decision

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to enter an occupation, it would assist greatly in fitting a person to one of the three thousand occupations which we now have. Psychologists state that more than half of us are working on jobs which are not suited to our individualities. This, perhaps, explains the high cost of labor turnover and the twenty per cent of the working force who are personnel problems. Industry is making an attempt to solve its personnel problems, through club work, insurance, training, better supervision, psychology, and psychiatry.

With all of our unemployment, staggered employment, partial-wage payment, old-age pensions, group insurance, industrial compensation, training and retraining, placement and replacement, and many other personnel problems, the personnel director has a very important work to perform. He should know individualities and how to guide them successfully. The standardization that is so good for machines and products is not good for the human mind because it is not a machine. The mind is an individuality, each mind unique and different from all others in its needs and in its capabilities. No machine is so perfect that it can be used as a substitute for trained judgment. Machines do not correct mistakes. They never learn. They get use and wear, but no experience. There will be no substitute for the human mind.

An extensive program in vocational education has been set up in Ohio to assist industries in handling their personnel problems in foremanship and apprentice training. Several hundred foremen have benefited by this program. During the past few months about eight hundred fifty foremen in Cincinnati, Springfield, Columbus, and Canton have been taking a shop-management course set up by the State Department and the men in industry. Besides these city conferences, several plants have organized courses for foremen which are being conducted by conference leaders trained by the State Department. Then, too, we should not forget the valuable industrial training courses being given at the Ohio State University under the direction of Mr. Stone and other capable instructors.

The Foreign Correspondent and the World He Lives In

By SIR WILLMOTT LEWIS[1]

THE FOREIGN CORRESPONDENT IS a servant of the newspaper, and it may be as well to say a word or two about newspapers before we talk of their servants. There have always been, and there will always be, two opinions about the newspaper press. Some think of it as a sort of Nazareth of literature, out of which no good can come; others think of it as a force exceeding all others in our modern world, as much by its performance of, as in, its power for good. Perhaps both sides are wrong, but in the meanwhile the opinion of the Press as to itself has risen steadily, and remains at "set fair."

There is no doubt that the Press is the greatest unsolved problem of modern democracy; there is equally no doubt that it is increasingly a problem of international politics. But for our immediate purposes we must think of it as a means by which the opinions and the relations of different peoples are organized, and we must remember that what is organized may be manipulated and even distorted. Nevertheless, it serves a useful purpose. It gathers and distributes information, and thus gives us an advantage our forefathers did not possess; it corrects some of the faults of diplomacy, for diplomacy does not always, or often, derive its opinions from the people or directly address the people.

The correspondent abroad, therefore, can be an unofficial and, so to speak, popular diplomat. He may be used by statesmen or political parties to popularize their policies, and he may be very much feared by those who carry on their designs in secret. His position, in short, assuming that he represents a great newspaper, may be as powerful and as influential as his own ability and sense of responsibility can make it, for he is concerned not only with the recording, but with the interpretation of events. At his best he should be a self-constituted warden of the public interest.

At the risk of imitating the rather wearisome copy-book maxims of our childhood, it should be said that the duty lies upon a man in such a position to tell the truth as he sees it, to avoid snap judgments, to be fair, and to be kindly. He should do his faithful best to report

[1] Washington correspondent of the *London Times*.

an event, not as an isolated phenomenon, but as something that takes place and is of importance in a broader scheme of things. History—and the newspaper writer is a minor historian—is a record of events, but it helps us not at all to know that one event follows another unless we perceive this sequence as marking some change in the ideas, customs, or conscious practice of men. The correspondent is not worth his salt unless he has trained his vision to recognize, and his pen to describe, the background against which events must move.

He needs, in other words, a background of the mind. He should know that for his purposes international politics is less a knowledge of countries than a knowledge of the relations between countries. It is not enough that a man should know many lands if he does not also know how they interact. The famous Cardinal Mezzofanti, it is said, could speak seventy-four languages and dialects, but I have nowhere read that he said anything of importance in any one of them. And a knowledge of many countries is only a first step to that wider knowledge which gives insight into the character of peoples and their governments, into the relation between peoples and governments. This relation was not always what it is, and the science of the relationship between peoples and countries is a growth of the last five hundred years. The method, the chief principle of action, and the purpose of international politics, as we know them today, have come into being in this half-millennium.

Three great periods may be distinguished. The first ends with the great international lawyers of the seventeenth century, the second with the French Revolution, and the third with the Great European War, the effects of which still govern the situation. In international politics the first period is the age of diplomacy, the second is the age of the balance of power, the third is the age of nationalism and imperialism, sometimes combined, sometimes in opposition.

Of the first period, which gave us the diplomatic system, it may be said that it proceeded on the assumption that a working relation between governments could best be maintained by the presence in the capital of each state of representatives from all the others, and by periodical conferences for the purpose of solving the difficulties which so frequently arise. The period which gave us that system gave us also that common rule for the limitation of force which we call international law.

In the second period, international politics got its principle of action, which we call the "balance of power." This was the time, between the seventeenth century and the French Revolution, when the great powers were consolidated, and when the assumption on which their policies was based was that if the contending forces were

exactly balanced, no open and destructive conflict would be risked by any party in the international gamble. With all its evils, let us note that even in this period equilibrium and the maintenance of peace were implicitly accepted as the chief purposes of foreign policy.

The third period began with the defeat of Napoleon and ended with the World War. It gave to international politics its chief purpose, the control of economic law. The manners and customs of diplomacy in this period were somewhat changed, because of the predominance of economic interests in the industrial system and the close alliance of financiers with diplomatists. The new problems of international politics were those of the undeveloped countries, protectorates, spheres of influence, the "open door," sources of raw materials, and markets for manufactured goods. A first beginning, however, in international politics as distinct from "foreign" politics was made in this third period, for the Concert of Europe and various international conferences did imply that there were interests common to many nations and that governments should consider these as well as their own separate interests.

Do I seem to stray from my subject? Yet we are now in a fourth period of international relationship, whose character no man can foresee, and whose development cannot be understood by any foreign correspondent unless he knows—unless he holds in the background of his mind a knowledge and understanding of what has gone before. The world of today, it seems to me, is at a turning point, and the signs upon the road point to co-operation or disaster. When, one hundred years ago, the failure of a serious attempt at world co-operation become obvious, Canning in 1823 wrote to Sir Charles Bagot: "Things are getting back to a wholesome state again. Every nation for itself, and God for us all." But Canning said something which all the facts of modern life deny, for men cannot now exist in their present numbers on the earth without world co-operation. The manufacturing populations of the north-temperate zone require for their food and clothing the vegetable products of the tropics; and the organization of tropical agriculture and transport requires the energy and science and capital of races who can only breed in a cool climate. Metals, again, and coal and oil are scattered irregularly over the land surface of the world, and must be brought from the places where they are found to the places where they can be most effectually used. Improvements in communication and transportation are constantly intensifying and complicating this economic process.

It is of such stuff as this that I would have the foreign correspondent form the background of his mind, and it is against such

a background that I would have him report the events of every day. His opportunity is less than that of the statesman, but is none the less a great opportunity. J. R. Green, the first historian of the English people, used to say that "the world moves along, not merely by the gigantic shoves of its hero-workers, but by the aggregate tiny pushes of every honest worker whatever." The foreign correspondent, if he can be nothing else, can at least be an honest worker.

The Ohio Newswriting Course

By ELDON C. HILL[2]

PROGRESSIVE THINKERS IN THE FIELD OF EDUCATION predict an increasing tendency in our schools toward the practical studies. John Dewey and E. A. Ross are two notable examples of those who believe that it is the business of the academic pursuits to prepare young people for the vocations of life. While not discounting the importance of the purely cultural studies, such as literature, languages, history, and the pure sciences, these educators and others of like mind would lay greater stress than we now do upon the usable courses.

Consider the education of Abraham Lincoln. Deprived of the advantages of institutional training, yet he secured for himself most of the values of the highest education. How? First, he read a great deal in the best books he could find; let us not disparage the significance of that. But in the second place, let us not forget that he combined a practical training with his book learning. Who could doubt that in the splitting of rails, in the keeping of a country store, in the manning of a flatboat, he did not receive much which helped in the formation of his granite virtues?

Perhaps the analogy is somewhat obscure. But my point is this: The aim and purpose of the newswriting courses in Ohio schools should be to give the student practical training, to bring him face to face with problems which are met in actual life. Therefore, the first emphasis in the newswriting course should be on practical assignments. Covering of a speech, an interview, an athletic event, or a play a week for each pupil would not be too much. After the student has written his story or feature, let the teacher meet him in conference, point out the flaws, and praise the good points of the work.

A second ingredient of the newswriting course should be a liberal amount of study of the theory of journalistic writing. Although

[2] Ohio Wesleyan University.

proficiency in writing can only be gained by a great deal of practice, there are values to be gained through understanding what is meant by the lead, other parts of story structure, and the essentials of newswriting which have been discovered through experience.

In the next place, a thorough training in observation should go into the course. No reporter, either in school or out, can accomplish much without the power to see things accurately and adequately. Most high schools today have motion-picture equipment, so that brief scenes could be thrown on the screen to test the alertness for detail in the newswriting students. This device is being employed in journalism courses at Ohio Wesleyan, and it will work as well in high-school instruction.

Finally, the high-school newswriting course should contain a great deal of drill in English composition. No matter how much training a person receives in setting his thoughts and observations down on paper, it will be of no avail unless he is instructed in accuracy of phrase, paragraphing, sentence structure, and word usage. The high-school years are the ones in which the pupil forms habits that stay with him for life. Great, then, is the responsibility of the journalism teacher. To him is given the opportunity of drilling the students in the most expressive and, above all, most accurate use of the mother tongue. Right here, it seems to me, is the chief contribution which the high-school journalism course can make.

The Newswriting Course

By OLIVER MATHENY[3]

When one is assigned to teach journalism it naturally follows that it will be his lot to publish a paper as well. Since most of us are assigned to teach other subjects also, it is necessary for us to make the journalism course as practical as possible. The following points are the absolute essentials that should be covered in the course: news stories, feature and human-interest stories, editorials, copy- and proofreading, headlines, style sheet, advertising and circulation, make-up and typography, exchanges and outside reports.

The writing of news stories is divided into three main steps, gathering, assembling, and writing. In the gathering of the news the sources should be pointed out, the proper way to interview should be stressed, and the reporting of speeches should be studied. In the assembling of the news, the rearrangement of the paragraph order

[3] High School, Springfield.

should be noted and chronological order reversed to order of importance. In writing, leads are the most important and the five *W*'s are as old as journalism itself: the feature of the story should be stressed and punch placed in the first five words of the story.

Feature and human-interest stories give life to a publication and every worth-while newspaper has them. They are easiest to write, since the time order is not important and the element of humor can be incorporated easily. Classrooms abound with suggestions, and it is easy to fill the entire paper with feature and human-interest stories if necessary. Considerable time should be spent in learning not only to write editorials but to appreciate their relative worth, for the editorial page is the real thinking part of the newspaper. The reputation of a paper comes from the news, but its character is gained from its editorials. Students should learn early that the thinking members of the community read the editorials, and, of course, they want to be classed along with these thinkers.

The preparation of the copy for the printer and the reading of it after it has come from the printer involve the learning of both the copyreading and proofreading marks. The most dreary part of the newspaper work and that which is disliked most is the work performed by the proofreader. Students fail to appreciate that a good story may be a poor one if it is not well edited.

To make a heading is easy, but to make a headline fit the story is another matter. The relation of the units, the decks, and the display headlines to the body of the story is one of the hardest things to do on the newspaper. Yet if the lead and the introduction of the story is well done, then headline writing is easy, for one features in the headlines the lead and the main parts of the story. Every school should adopt its own headline schedule to fit its type and size of paper.

A style sheet that is followed closely by any newspaper solves all the trouble in knowing how to capitalize, punctuate, abbreviate, quote, use figures, and to express dates, titles, and addresses. Uniformity should be the watchword in the general style of any newspaper, and the way to accomplish this is to use your own style sheet.

Not so much time is placed on the circulation and the advertising as is given to the editorial side of the paper, yet any figures showing in red at the end of the year convince us that more time should be given to this business. Advertising sales talks and circulation campaigns should be as much a part of the newswriting course as the editorial side.

Exchanges abound with suggestions and hints for us to follow in our own course. Seeing what others are doing often makes us take stock of our own possibilities to see if we are reaching our

maximum. News stories, editorials, headline arrangement, special features, art, and the like suggest possibilities for us to follow. Numerous newspaper contests give papers a definite rating, so that we may know what papers to put on our exchange list.

Time should be spent on the explanation of the general appearances of the paper, the ink, the paper, the blending of the type, display type, boxes, and type arrangement. The make-up of the paper and the presswork are essentials here. Outside reports from other texts are important in any course of study, and especially in this one when facts such as the following are studied: picture-making, the work of the linotype, presses, the point system, history of journalism, newspaper law and libel, and personal experiences of those in the field.

This course should be limited to those in the last half of their junior year or to Seniors, because by this time they will be well grounded in rhetoric. Journalism teachers should not be forced to drill on such matters as grammar, punctuation, coherence, and unity, and only the upper third of the school class should be enrolled. The course may easily be extended to two years, with the first year spent on theory, and the second devoted to assignments on the school paper.

The aims of the course should be high, but yet within reach of all taking the course. The following appear to me as something concrete to work for: to have the students master a good text designed for a full year's work; to cultivate in them the power of handling the facts; to teach the students to express themselves adequately in good English, especially in written English; to aid them to obtain a clearer perspective; to equip the students with a store of journalistic information; to enable them to understand all the departments of the newspaper; to offer a trial for those thinking of a career; to develop imaginative and creative work; to stimulate aggressiveness, accuracy, and carefulness of details; to develop the faculty of discrimination with regard to the selection of news items; to promote character training and good citizenship; and, finally, to inspire the students with a love of good reading and an interest in current events.

I recommend any of the following books as texts for the course:

Borah, L. A. *Newswriting for High Schools* (Allyn and Bacon)
Dillon, Charles. *Journalism in High Schools* (Noble)
Flint, L. N. *Newspaper Writing in High Schools* (University of Kansas)
Harrington, H. F. *Writing for Print* (Heath)
Harrington and Harrington. *The Newspaper Cub* (Heath)
Huff, Bessie. *How to Publish a School Paper* (Mentzer, Bush)
Hyde, G. M. *A Course in Journalistic Writing* (Appleton)
Otto, W. N. *Journalism for High Schools* (Harcourt, Brace)

The Ohio Newswriting Course

By EDWARD A. EVANS[4]

When asked to discuss this topic, my first impulse was to ask: "Why should high schools attempt to teach newswriting at all?" That, I imagine, would be the reaction of most working newspaper men to the topic. We are inclined to feel, at least, I am, and I know many other editors who agree with me, that the college schools of journalism are threatening our profession with an overproduction of raw material. With newspaper mergers and with staffs being reduced in size because of the business depression, I cannot imagine where most of this year's crop of journalism graduates will find jobs. And I suspect that the present condition will not be materially different for several years to come. Something said by your presiding officer, however, is reassuring. She has told us that the newswriting courses in the high schools of Ohio are not necessarily vocational. By no means all the pupils who enroll in these courses, as I now understand, necessarily intend to become reporters or editors. I am glad of that.

It would be a good thing if more people could learn to write the English language. Particularly, from my point of view, it would be a wonderful thing if more people would learn to read the newspapers. Teach your pupils how to read the newspapers with intelligence and understanding, and you will find every editor applauding your efforts.

A high-school newswriting course, it seems to me, should be on very much the same basis as a high-school course in manual training. The boy who enrolls in manual training may not become either a carpenter or a bridge builder, an automobile mechanic or an automotive engineer. He will learn how to use certain tools, and the knowledge will stand him in good stead, even if he later decides to be a banker, a lawyer, a doctor, or a preacher. The tools of the newswriting business are words. No man or woman, no boy or girl, can possibly be worse off for knowing how to use those tools.

I think, then, that you will accomplish great good by teaching your pupils to work with words. Teach them to spell. That is one thing, as I have good reason to know, that many high-school and even college graduates cannot do. Teach them the practical use of the rules of grammar. Teach them to punctuate.

Teach them, also, to use their imaginations. Any time they may spend in study of the technique of newspaper-making, in my opinion, will largely be wasted. Most newspapers are suffering from

[4] Editor, *Columbus Citizen*.

too much technique, too slavish an adherence to rules, too much formalism. The who-what-why-when-where formula is a good one, in its place, but it tends to stifle originality. And there is great need of originality in newspaper writing and in every other form of writing. If, through your newswriting courses, young people learn to write with vigor, with clarity, with accuracy, with understanding, and with imagination enough to see beyond the mere surface of things, you will accomplish a great deal of good.

Newswriting and Its Relation to English

By MARGARET M. SULLIVAN[5]

WHERE BEST PRACTICES ENSUE, in nearly seven hundred high schools in the United States, the composition-newswriting course of two semesters is elective for eleventh- and twelfth-grade students; it offers credit equivalent to that of any regular English course, one unit for one year's work, but only when the student has completed the work of two terms. During the first semester the course, through the study of theory and practice of newswriting, gives intensive training in English composition and prepares students for the appreciation of publication. In the second semester the publication of the newspaper focuses all the training of the previous semester. Under a well-trained teacher such a course meets any or all objectives of modern education and of the English curriculum.

All through the decades of the history of the teaching of English composition critics have attacked high-school courses because they have killed interest, because they taught merely conventional subject-matter, and because teachers of such courses preferred the conventional signs of learning to efficient social service. Today the well-defined course in newswriting through better quality of teaching takes a tip from John Dewey; it "gives purpose and spirit to learning."

When the high-school course in newswriting is elective, it attracts students who have shown aptitude for writing, and also those who show promise, even though their previous work has not evinced a great amount of mastery. William H. Kilpatrick, in his volume, *Our Educational Task*, says: "Creation does not best go on in a vacuum but amid stimulating examples. Creativeness can thus be cultivated in each on his own level of learning."

Every type of English composition comes into practice in the

[5] South High School, Cleveland.

newswriting course, narration, description, exposition, and argumentation, through human interest stories, features, columns, interviews, speech reports, symposiums, editorials, sports writing, campaign stories, and special departments. Techniques necessary to the development of each type come as the learner needs to make himself clear. "To get subject-matter as it is needed is thus to bring growth" is a maxim from Kilpatrick.

Interesting openings for sentences and for paragraphs require variety in sentence structure. Headlines that are not wooden reveal knowledge of the meaning of words. No better vocabulary test has yet been devised than that of the writing of headlines. Well-written feature stories, live "columns," logical editorials, pungent paragraphs in good high-school newspapers are splendid evidence of self-cultivation in English on the part of many young writers. What better application of the essay is there than the editorial or the informational feature story?

Character sketches of living personalities appearing in interviews are just as valuable media of English composition as are imaginary sketches written about some fictitious character from the works of some English novelist. Usually the newspaper sketch is far more stimulating. Sports stories well written certainly can have local color and atmosphere. News stories promote condensation better than any device yet recorded in the usual English practice pad. Application of the rules of structure for a news story objectifies outlining. Daily practice in mechanics for the preparation of manuscript can only result in the proper appreciation of syntax, diction, and rhetoric. Style develops when interest promotes it, when teacher and pupil critics discuss it, and when cold type reveals it.

Since the content of the newswriting courses is, after all, subject-matter right from the life around the students, the aim of such courses is to enrich that life as fully as may be with the best that is known the world over. Association with a group interested in the same outcomes as he is promotes the intellectual growth of the learner. Objectifying English composition is the work for high-school courses in newswriting.

The Prevention of Misguidance

By P. M. WATSON[1]

THE MACHINERY FOR GUIDANCE appears to be well established. Comprehensive, well-phrased definitions and carefully organized plans of operation are found in most of the modern books on school administration. Objectives for all types of guidance, vocational, educational, physical, social, moral, and recreational, have been quite definitely set up. The major guidance problems of research, counsel, orientation, training, placement, and records have been thoroughly and adequately discussed by the experts. Everywhere we see the conscientious executive exerting himself to adapt the general theory to his own local conditions.

Yet the most optimistic will hardly venture the assertion that guidance as it functions today is effective. In spite of the efforts of earnest people, vast numbers of children still leave our schools with little evidence of definite purpose. They still reveal an aimlessness, and an uncertainty of themselves and their future. They still tend to succumb to the lure of the immediate, to wander into blind-alley jobs or to aspire to occupations for which, so far as can be discovered, they have no real ability. And, more alarming still, there is abroad among some of them a conviction that the schools have not guided them aright, that there are more alluring paths to easy money and soft living than their instructors have pointed out. To such children the more dangerous forces in modern society are ever ready to make a strong appeal. The persuasive counsel of the street-corner crowd, and the thrilling accounts of adventure into the lawless activities of the underworld which they cannot escape hearing draw them into experiments from which they do not always escape unharmed.

These children, either aimless or misled, are present in most schools in sufficient numbers to give us some concern. How to prevent this sort of misguidance, how to steer them back, or better still, to keep them from ever wandering away, is one of our important guidance problems today.

A glance at the history of vocational guidance reveals that it has passed through two distinct stages and is entering into a third.

[1] Principal, Thomas A. Edison High School, Cleveland.

The first stage was characterized by a confident assurance that definite predictions and the steering of children into definite occupations were possible. A few years of experimentation in this direction were followed by a sharp reaction. The second stage was concerned chiefly with the imparting of vocational information. It was believed that if the child knew a great deal about numerous vocations it would necessarily follow that he would make an intelligent choice, but today we are having a growing protest against this sort of guidance. We are told that it is too passive, that knowledge does not always lead to action, that something must be done to press the child toward a decision. This appears to be the beginning of the third stage. Into what it will eventually develop is by no means clear. If it is to be an advance over its predecessors, it must avoid definite prediction on the one hand, and, on the other, the encouragement of irresponsible plunging into ill-considered occupations.

There is a matter here, however, which is sometimes overlooked. What good is all of our advice and counsel, what profit is there in all our information programs and our vocational training if the child rejects it in favor of a program of his own? If after ten or twelve years of association with us and our teachings, he turns his back on it all and will have none of it, would we not do well to inquire why? And when we do inquire, we are likely to discover a great part of the trouble lies in the child's classroom experiences, in the kind of teaching he has had. We have heard much of late years about concomitant and associative learnings. We know that a child may be driven to learn a great deal of arithmetic, and yet dislike it so that he will escape from it at the earliest opportunity. It is unfortunately true that the sum total of his concomitant learning may be such as to undermine his confidence in the entire school program. It is entirely possible, I think it highly probable, that we can get better results in guidance without a guidance program than without good teachers. A happy, successful school experience in which the child approaches his school problems with zest, masters them with satisfaction, remembers them with pleasure, and seeks to have more of them is far more likely to result in satisfactory vocational outcomes than the most logical guidance program mechanically administered.

I suppose most of us have a large proportion of fairly good teachers. But many teachers, otherwise good, have been schooled in the wrong philosophy. They must teach the subject though the heavens fall. They do not recognize or appreciate the tremendous importance of a child's resulting attitude, of his concomitant learnings. So whatever may be our future theory and practice of guidance, it is not likely that we will ever prevent a large amount of misguidance

unless we give close attention to the philosophy of teaching which is active in our faculties. Unless this is correct, our most elaborate guidance program will be built on a foundation of sand.

Placing the Emphasis in Guidance

By C. D. WASHBURN[2]

WITH A SURPRISING DEGREE OF REGULARITY, new theories of learning and methods of teaching are advanced every few years. Thus, within the last two decades, our attention has been focused for brief periods on such topics as the socialized recitation, the project method, specific objectives, various forms of individualized instruction, and the intelligence-test panacea. These methods, each having merit, were found to be of greatest value when no one of them was used exclusively, but rather when there was a commingling of all. Whenever any discredit has fallen upon any of them in more recent times, it has been due to the fervor of their advocates and the over-emphasis placed upon them when they were first announced to a waiting and an expectant educational world.

With these thoughts in mind, what are we to think concerning the question of guidance which is now receiving such widespread attention? Is it just another passing fancy, or is it of permanent importance? The answer depends quite largely upon the placing of emphasis, both in the scope of the content and in the personnel of its administration. An understanding of both of these is necessary. To a certain extent, all teaching contains elements of guidance, but the guidance found there has been sporadic and incidental and is likely to remain such. This is because the teacher has before him the subject-matter of the textbook. But the guidance program shifts the emphasis from skills in subject-matter to skills in living. It is concerned, not with how to make a living, but rather with how to live. It should also be said at this time that the teacher is not expected to play the part of a palmist or crystal gazer. It is his duty to help in the capacity of an adviser to aid the pupil in the formation of his plans and purposes and to help him in their execution.

The need for guidance has grown with the size of the secondary-school units and the variety of the curriculum. In the elementary school the pupil is one of a group of thirty or forty under a teacher who, by constant contact, has a thorough and sympathetic understanding of him. In the secondary school he is likely to become just

[2] Principal, McKinley Junior High School, Columbus.

another pupil among a thousand or two thousand. His identity is lost or submerged. The guidance program, administered largely through the home-room teacher, can furnish the secondary school that intimate relationship between teacher and pupil which all too often disappears at the close of the elementary period. The thought is well expressed by Mr. Lewis in these words, "It is the duty of the teacher to see through Johnnie and to see Johnnie through."

A study of guidance programs will reveal another interesting fact. To practically all educators the word seems to be synonymous with vocational instruction. In the wave of materialistic *Kultur* preceding 1914 the classical vehicle of Greek and Latin was being largely crowded off the road of learning and in its place the monkey wrench and a pair of overalls appeared. Deliberation would suggest that the vehicle and the accessories should be kept in juxtaposition and that while vocation and technical training are desirable, they should not infringe upon other phases of guidance, some of which are conceivably of greater value to the individual and to society.

Of these, educational guidance deserves special attention. This deals with the direction of pupils in their choice of curriculums, courses of study, and the colleges they expect to attend. It also deals with study habits, causes of failure and, in short, with the scholastic standing of the pupil. As can be seen, this type of guidance is directed especially toward those pupils who expect to remain in school; vocational guidance, to which it is closely related, has in more prominent view those who expect to quit school. By what theory should this latter class monopolize guidance activity at the expense of the former?

Other fields of guidance can only be mentioned, but they include social and civic aid. In fact, from the viewpoint of the government, this phase would probably be classed first in importance. Health guidance and ethical training are also included, to say nothing of the growing problem presented by leisure time. In fact, the guidance program is as extensive as the cardinal principles of education.

Having seen the scope of guidance, let us consider briefly its administration. As just intimated, the unit for this is the home room. The very essence of the plan is based upon a knowledge of the pupil, his abilities, capacities, limitations, likes and dislikes, which only the home-room teacher can know. Out of this should grow a sympathetic understanding between teacher and pupil without which guidance is a mere sham. But what of the counselors who fill a nice place in charts intended to show how well a school is organized? I should say that if they have any real value at all, it is as aids to teachers. Their worth to pupils is of very dubious value. If successful

guidance requires any one thing, it calls for decentralization in its administration.

May I conclude with the thought, then, that guidance is not a passing fancy if the emphasis is properly placed. It insures the teaching of the child. It is basic and will do more than any other part of the school program toward developing the child into an intelligent and useful member of society.

Learning to Live through Living Experiences

By JOHN FRANKLIN DONNELLY[3]

THE SOCIAL, EDUCATIONAL, AND VOCATIONAL ORIENTATION of its students is a primary aim of the junior high school. Properly administered, such subjects as general science, general social studies, general shop, general mathematics, and the various short courses now found in the junior high-school curriculum will take care of the necessary educational exploration. In Monticello Junior High School, however, we feel that activities such as the clubs, school paper, and an organization known as the "Student Aides" offer social and vocational exploration that cannot be duplicated by the vicarious experiences of the classroom.

The Student Aide Organization emphasizes activities which are similar in nature to those found in real life. Its work is characterized by self-direction under close supervision. At present it is composed of six departments: the office secretaries, student department store cafeteria patrol, lost and found, stage crew, and hostesses. The hostesses care for the lunch trays of guests and teachers. The function of the other departments may be determined from their names. The organization is under the direction of an assistant principal. Each department consists of a student manager, assistant manager, and enough other children to perform assigned tasks.

The six departments afford experience with the following skills: operation of a building telephone exchange, minor secretarial work, business management, salesmanship, simple bookkeeping, stagecraft, and electricians' work. This list can be extended to almost any limit. Here are a few other possibilities: cafeteria management, job printing, library management, photography, banking, bicycle repairing, shoe repairing, and shoe shining. Yes, shoe shining! Two or three of the boys in our school who have already shown tendencies toward banditry might be saved from such a career if they had the satisfaction

[3] Monticello Junior High School, Cleveland Heights.

of accomplishing a small honorable task of this kind. Furthermore, a chain of bootblack stands might be made quite profitable as a life business. The parents want us to prepare their children for the socially exalted vocations, but the school must exalt the vocations best suited to the needs of the children.

The possibilities for social exploration or orientation are summarized in the following statements: (1) The boisterous child that goes about trying to make himself and others believe that he is something is frequently made happy and less annoying through success in some small aide responsibility. (2) The timid bright, or timid slow child becomes more confident and desirably aggressive. (3) The superior child finds something to fill his abundance of idle time, and mischief's opportunity is lost.

In other words, concrete living activities in the school have a strong tendency to solve social maladjustment by assisting the child to find a place in the group. The educational values of living experiences lead to the assertion that the time may come when the inside wall of the corridor in our popular quadrangular buildings may be broken by a series of small shops operated by the children under the direction of an able organizer, and the outside wall cut by doors to classrooms where equally skilled masters of subject-matter preside; not substitution but exploration and correlation.

Adjustment through Creative Control

By PHILIP W. L. COX[4]

THE ADJUSTMENT OF BOYS AND GIRLS at the dawn of adolescence to the realities of their environments is the function of the junior high school. The term, "adjustment" is used here in the restricted sense of desirable and propulsive behavior changes. In conventional practices, the school has conceived its function to be that of subject-matter teaching. It has, therefore, disregarded any adjustment other than that of lesson-learning. The curriculum has been conceived to be itself the end of school education; we have tested and taught and retested; we have drilled and marked, punished, and rewarded; and we have passed and flunked pupils, seeking always and at any cost to compel the mastery of subject-matter.

How the pupil has felt about what he has learned we have scarcely questioned; we have seldom considered it at all important. Docility has been the one behavior adjustment we have demanded.

[4] School of Education, New York University.

Learning has existed in books or in the mind of the master. If youth would become informed, we have in effect said, he must accomplish the tasks set forth by the school. It is no wonder that this process seems to G. Bernard Shaw "to produce imbecility." It "begins by assuming that every boy can be an Einstein if he is not allowed to be lazy, and that you can imprison children and hold them to tasks beyond their capacity and foreign to their aptitude all through their growing years without damaging them."[5]

No intelligently conceived junior high school, however, is making any such assumptions. The primary justification for this new institution is that it shall set youths free to realize their own potentialities in an environment of encouragement, mutual helpfulness, and glowing appreciation. The advisement-guidance movement comes to reinforce the philosophy and practices to which the junior high school is dedicated. It premises the conception of education as growth, and this conception in turn assumes that growth takes place within the organism. It involves self-activity driven by desire, self-discovery through practice, and the modification of practices so that they may lead frequently to success.

Adjustment, then, is an effort of the human organism to restore an equilibrium previously upset by some change either within itself or in its environment. Because the upsets of equilibrium at the dawn of adolescence are potentially serious, and, hence, most important, the junior high school is strategically placed to deal intelligently and sympathetically with these problems. We can scarcely control the individual's biological inheritance or his already acquired tendencies to behave, but we can directly control his school environment, and we may indirectly affect his out-of-school environment.

Three conditions are necessary, however, if the school is to be helpful in promoting desirable self-adjustments. First, the school must offer to its children a life so varied that each one—no matter how scholastically dull, how lacking in special talents, or how unconventional in appearance or manners—can find a place within the school community which he is competent to fill. Second, the principal and at least a strong minority of his teachers must comprehend which adjustments really are desirable and which are negative or harmful. And third, there is needed a *finesse* on the part of teachers, specialists, and advisers by which the process of education may be carried to successful completion.

When the curriculum of the upper grammar grades and of the

[5] Reply to Master of Clayesmore School, quoted in *Journal of Education*, CX (October 7, 1929), p. 274.

high school consisted almost entirely of the academic subject-matter, as it did in 1890 and perhaps somewhat later, the most direct way to enrich the social, artistic, and intellectual life of the school was to permit extra-curricular activities to develop. A few pioneering school people actually promoted athletics, clubs, dramatics, and publications long before the turn of the century. In the modern junior high school there is no longer any reason for retaining the absurd word "extra-curricular." For much of the curriculum, in art and music and physical training, in shop and home-making and general science, in civics and English, in commercial classes, and, occasionally, even in foreign languages and mathematics, is just as truly creative and spontaneous as are clubs, athletics, dramatics, orchestras, or students' councils.

What has happened is that the whole educational environment at the junior high-school level has been profoundly modified. The school is, indeed, so controlled that every youth may in some regard be creative. By a "creative school control" is meant the maintenance of an environment wherein each individual, both alone and in co-operation, competition, and conflict with his companions, young and old, may be stimulated and guided to behave in desirable ways. As athlete, as debater, as organizer, as mechanic, as clerk; indeed, in many and varied rôles do boys and girls make direct and significant contributions to class and club, to church and home, to school and scouts, and to neighborhood and city.

Every normal youth of our land is physically, mentally, and emotionally active much of the time. He finds satisfaction and self-realization in the complex emotional state which results from feeling and striving and acting under many and varied conditions. To the extent that he achieves evenness of temperament, his social relationships are vitally affected. For good or for ill he is being guided thus by the community to participate in civil life now and in the future. The social ideal fixes the standard of behavior for each one of us. If the school can help each one to identify himself with a worthy social ideal, if the habits, attitudes, and impulses of each one are brought into accord with a high social ideal, then is the aim of education accomplished.

In our American society, and perhaps it is equally true for all the world and all past ages, conventional success has "meant doing what everyone else is doing, only more so." This stereotype has distorted and accelerated the use of narrow rivalries as the great motive for the direction of society. Only a few choice souls have avoided the shriveling effect of such anti-Christian and vicious practices.

Under the competitive system some men and women must fail, and many, the great majority, must forever remain unnoticed. Fortunately, extra-school life is so varied that many people may find normal expression in church work, in membership in fraternal organizations, on the golf course, or as a salesman. If not, then as gangster, or as wise-cracker, or as auto-speedster, or as back-slapper, he finds compensation for the world's neglect.

In school, we have, in the not too distant past, reproduced so narrow a section of social life that the few children who succeeded stood no better chance for success in out-of-school life than those who failed. The great mass of youths then, as well as those in academic schools of the present, have avoided the distortions which they might otherwise experience, by the simple device of paying no attention to the school or its teachers. Corporeally they are present in classes, but spiritually and intellectually they boycott the vicious and stupid school procedures. Nor will all of the scoldings and jeremiads of Lowell and Flexner and Learned change the situation.

Indeed, those few students who really do care about marks and credits and those parents who are so eager for their children to excel are likely to be in much worse condition than those who do not worry. Loss of sleep, fear of the wrath of parents and of the ridicule of classmates, lack of self-confidence, envy, and hatred attend the poor youngster who strives for a victory that he can never win. He cannot know that he is merely not "school-bright," to use Commissioner Butterfield's term, and that the world little cares nor long remembers anything about the academic twaddle on account of which teachers and parents are now breaking the child's heart. Nor is he likely to realize that maturity, which Lippmann almost identifies with morality, consists largely of wanting what one can get and, hence, of integrating his personality through the success which attends his desires.

Even in the creatively controlled school, however, the motive of rivalry does remain of paramount importance. But it is a reconceived rivalry, and it has been broadened and deepened and ennobled in its reconception. School spirit, room spirit, club spirit, community spirit, and even individual spirit have been so sublimated that pupils and teachers seek first the success of the school, the room, the club, and the community. Self-success, when consciously sought, each one comes to measure in terms of his own resources and possibilities. Comparisons are thus made absolute, and no one need taste inevitable defeat. Is the paper better than it was last week or last year? Is the attendance, the care of the room, the assembly exercise, or the mutual helpfulness as good as teachers and student can make each?

They are jealous of their good names and of the organizations with which they are associated. They cease to be angry with the critics. Instead, they seek to evaluate the reasonableness of the criticisms, and, if possible, to improve the unsatisfactory conditions to which they may call attention. This is to say, that the modern junior high schools, their teachers, and their pupils are rapidly growing up; they are becoming mature; they are shaking off the infantilisms which have for so long a time disgraced the college, the academic high schools, and the conventional grade schools.

Given a generously conceived school environment and teachers who are spiritually mature, children may adjust themselves without recourse to special technique. Nevertheless, a recognition of the manner by which salvation may be accelerated justifies a consideration of the matter. Teachers who are adequate advisers know that no youth can be normal who feels himself to be a failure, and their practices conform to the knowledge. They know that a task, a plan, and freedom are so important to every human being that without them "a person cannot be quite sound mentally," and with them "apart from accident, infection, or heredity one can have no serious mental disorder."[6] They know that no amount of bullying and unrelenting superimposition can make youths accept arbitrary assignments as tasks which involve planning and freedom.

Teachers as they grow in watchfulness for advisement opportunities and in their ability to serve youth come to respect the unique personality of each pupil, to encourage him to give expression to his ego-impulse, and to convert his fears and inferiority feelings into successful performances. They gain an insight into the significance of Morgan's definition of the will, the expectation of success. And they so diversify the kinds of approvable activities in which each may engage that the genius of each one finds expression, and an atmosphere of universal victory pervades the home room and the classroom.

The teacher as an adviser bursts the confines of his classroom. He increasingly realizes that the pupil's out-of-school life is a more significant control of behavior and attitudes and aspirations than the school can often be. He is, therefore, alert to exploit every interest in music, literature, drama, science, art, athletics, civic activities, nature, and in the occupations of parents and neighbors. He seeks to build where activity already exists.

For life is like a bicycle, it is in a state of stable equilibrium only when it is moving forward. The moment we inhibit or thwart activities and aspirations of life they fail and life becomes futile. But

[6] Burnham, W. H. *The Normal Mind*, pp. 213–14.

guidance in the active living of life is essential and natural. It gives direction through promoting a discrimination of objectives and satisfactions. And the teacher as an adviser, because of the frequency and the potential intimacy of his contacts with youth, is frequently the only member of the staff of the school who can exert such potent influence.

These three conditions, creative control, philosophy, and techniques, cannot be superimposed by the command of superior officers. They must grow together. Each development in one field will straightway affect the others. An appreciation of creative activity is needed if we are to develop a creatively controlled school, but the progress of such a school reacts on the philosophy and sentiment beneficially. Similarly, the sentiment for and the operation of creative activity makes it relatively natural for teacher advisers to help pupils seek out their salvation with joy and self-assurance. And the use of such techniques promotes both the sentiment in favor of creative activity and the realization of a creatively controlled school.

In a word, the techniques of advisement and an adequate philosophy of guidance are inherent in all effective processes of education. For neither technique nor philosophy can exist apart from practices. The great contribution of the guidance movement to education has, indeed, been the increase of understanding and skill which it has stimulated teachers, supervisors, and administrators to develop. The victory is not yet entirely won, to be sure. Guidance specialists there are, and school administrators there are who still maintain that teachers are not capable of giving counsel to youth; but such reactionaries are few and of decreasing influence.

The typical alert case-worker, psychiatrist, counselor, dean, or visiting teacher now recognizes that school adjustments depend on practices rather than on interviews, and, hence, that school practices must take place in clubs, classrooms, home rooms, lunchrooms, and assemblies, at parties and debates, on the play field and along the corridors. Therefore, they seek increasingly to help the teachers to adopt the philosophy and techniques of advisement as controls for their sponsorship and leadership of all students' activities.

The over-age daydreamer may be given a conditional promotion so that he can sit among children of his own age, he may be given new electives to replace those which have not stimulated him. But unless the teacher sponsors participate actively in helping to find challenges, in stimulating to undertake some adventure and to gain success, the mere changes of grades and electives would be of doubtful value.

The best home-room adviser of over-age adolescent boys known

to the writer is Miss Kate Jones, of the Ben Blewett Junior High School, St. Louis. Her success is reflected in the following paragraphs from the Yearbook of 1920:

It was a few days after the beginning of the fall term, when all the pupils were wondering who was to be their new adviser, and whether we were going to get a teacher that was willing to make us happy and make things like home. We felt like people at a circus, who take a chance on a raffling machine that costs twenty-five cents a shot, and who had their lamps focused on the prize in the rear of the tent, and who were wondering whether they would win or not. They didn't know, but they took a chance. Well, that is the way we felt before the opening of the present term, when a certain few boys were taken from one group, put into another, still another, and at last we found ourselves in Miss Jones's room, with thirty-five good fellows.

All of us boys were happy as heck. Our adviser, Miss Jones, suggested the name, Blewett Braves. It was unanimously adopted. It sounds weird, doesn't it? Of the big group of thirty-six boys, nearly everyone has some office in the school. Some of the guys have more than their share and have as high as four offices. We have the Captain of the Corridor Officers, the four Lieutenants, one Sergeant, and eleven Corporals. We have the president and the vice-president of the ninth-grade congress and two representatives to the cabinet. Also we possess thirteen members of the "B" council, three lunch-room cashiers, and two servers. Another feather in our cap is the barn dance we gave, in which eighty members of the ninth grade, faculty and pupils, took part. It was a success that put the Blewett Braves on the map. . . . Well, you've heard all about us. Our wigwam is 108.[7]

The individual aim of educational guidance, as of education itself, is the integration of the personality of each pupil. Such an aim can only be achieved through social interactions. Self and society, Cooley insists, are two names for the same thing. These statements are peculiarly true for the pupils of junior high-school years.

To know what each pupil can contribute, to get him to desire to do it, to set the stage so that his effort may be successful to the extent that he makes earnest effort—in a word, to replace the conditions that repress by conditions that encourage expression with satisfaction —require great resource and true teaching and advisement. They are of utmost importance, however. And they do work in practice. Even relatively mediocre teachers are frequently, one might almost say generally, caught up in the friendly and joyful spirit of the groups. Such "conversions" require administrative *finesse*, of course. It requires a "big brother" and "big sister" type of co-operative supervision. It requires decentralization of responsibility and creative

[7] "Blewett Junior Life," *Yearbook of Blewett Junior High School.*

leadership. It requires that the principal himself become adviser and sponsor to a faculty "advisory group," a faculty "gang."

This is no small accomplishment. It is more significant than correct English usage, more important than history dates, or even than intellectual problem-solving. It may result in the child's discovery of, if not in the saving of, his soul. Freed of emotional conflicts and repression, calm and confident within the limits of his ability, each one goes about his daily work, in school and out, knowing from happy experience that in some capacity his contribution is unique and is needed by his fellows, and that to the extent that he puts forth earnest effort some measure of success will result. All of this he knows, not as information, but rather as a behavior complex. He walks with head higher and shoulders more erect because his conscious self and biological self are in accord. He is encouraged to live a life of positive action that satisfies his unconscious self.

The truth of the following paragraphs from *The Way of All Flesh*, written over a half-century ago, must now be apparent. Speaking of the boy, Ernest, shortly after entering Roughborough School at about thirteen, he says:

> The dumb Ernest persuaded with inarticulate feelings too swift and sure to be translated into such debatable things as words, but practically insisted as follows:
>
> Growing is not the easy, plain-sailing business that it is commonly supposed to be: it is hard work—harder than any but a growing boy can understand; it requires attention, and you are not strong enough to attend to your bodily growth, and to your lessons, too. Never learn anything until you find you have been made uncomfortable for a good long while by not knowing it; when you find that you have occasion for this or that knowledge, or foresee that you will have occasion for it shortly, the sooner you learn it the better, but till then spend your time in growing bone and muscle; these will be much more useful to you than Latin and Greek, nor will you ever be able to make them if you do not do so now, whereas Latin and Greek may be acquired at any time by those who want them.
>
> You are surrounded on every side by lies which would deceive even the elect . . . the self of which you are conscious, your reasoning and reflecting self, will believe these lies and bid you act in accordance with them. This conscious self of yours, Ernest, is a prig, begotten of prigs, and trained in priggishness; I will not allow it to shape your action, . . . Obey *me*, your true self, and things will go tolerably well with you, but only listen to that outward and visible old husk of yours which is called your father, and I will rend you in pieces even unto the third and fourth generation as one who has hated God; for I, Ernest, am the God who made you.[8]

In the creatively controlled school, life is abundant and not

[8] Butler, Samuel. *The Way of All Flesh*, p. 130. (Modern Library)

artificially restrained; eagerness and joy abound; success in some degree or form attends all earnest efforts. Hence, it is easy and natural for youths to behave in socially desirable and self-satisfying ways; indeed, whatever is self-satisfying is also socially desirable. The creatively controlled school is an embryonic typical community, a purified and idealized democratic society.

A Russian Pre-Kindergarten Experiment

By ALICE WITHROW FIELD[1]

OF THE MANY RUSSIAN EXPERIMENTS with the pre-kindergarten child, both medical and social, there is one which is of special interest to us in that it differs the most widely from American technique in handling young children. This experiment is known as the *crèche*. *Crèche* is the French word for nursery, and it is universally used as the name for those organizations in the Soviet Union where children from six weeks to four years of age receive their education. The *crèche* in Russia now is an organization of extreme importance, and it can in no sense be compared to most of the ordinary day nurseries in this country, including the Town and Country School in New York, because it is the institution in which many city children and some village and country children receive their first education. In fact, when the Union of Soviet Republics becomes completely communized every child in that country will have access to the *crèches*.

At the end of the October revolution, 1917, the Russian women, who had played almost as active a part as the men both during the war and afterward, took it upon themselves to establish full feminine emancipation, and to this end they founded the Institute for the Protection of Women and Children and established headquarters in Moscow. When the new laws of the Soviet government were formed those affecting women were few and simple, for they gave women the right to live and work as do men. At that time the concept was formed that every law or custom which could possibly affect women also affected children, for women are above all mothers or potential mothers. Therefore, when women were not only given the right to but also encouraged to work in factories and on the farms as do men, it was first of all necessary to decide what to do with the children. The *crèche* was the solution, but this is not the sole reason for the existence of the Russian *crèche*. What was, and still is, most important in Russia is the future generation. In order to insure that the next generation be healthy and sympathetic with communism, it is important that, first, all adults be educated in child

[1] Lenox, Massachusetts.

care and training, and, second, that something be done about the exceedingly high child mortality. Again the *crèche* was the solution, for it serves as a model from which parents are taught the most modern methods of child training, and it also serves as a kind of child medical center where the health of the future can be carefully guarded. Today it can be said within reason that the prime function of the Soviet *crèche* is to establish sound health in all Russian children. Therefore, in planning the daily lives of *crèche* children, the first concern is child hygiene.

A purely secondary but important function of the *crèche* is the type of education which is given the children, for it is well known that a child's later life is greatly governed by the first few years. Certainly when a fundamentally sound mental and physical hygiene is introduced at an early age, many of the problems which face educators will cease to exist.

The *crèche*, therefore, as well as being a health center, is to all intents and purposes an educational organization, since it attempts to teach both parents and young children. As important as adult education is, it is perhaps more interesting to see what the Soviet government is doing to give formal education to children, and so I will, as far as possible, confine myself to the actual daily routine of *crèche* life.

Factories and offices employing female labor always have a *crèche* attached to them, as do government offices, some universities, and co-operative farms. It is especially interesting to us who tend to discourage marriages among university students to discover that the Russians not only allow such marriages, but seem to expect them, and even provide day nurseries for the children of married students. However, most of the *crèches* are connected with factories and supported by them. When I was in Russia in 1929 about 10 per cent of all city children were in *crèches*, and the percentage has doubtless been raised since then because the number of such institutions is steadily increasing. Each of these nurseries accommodates about sixty children under four years of age. Their mothers bring them to the nurseries in the morning on their way to work and take them home again in the evenings. During the first year, while the mother is nursing the child, she goes to the nursery every three hours in order to give him his feedings; otherwise the parents do not see their children during the day.

Each morning when the mother brings her child to the nursery, she undresses him in the reception room and hands him to the attendant nurse, who makes a short physical examination. If he is clean and well he is admitted, and the mother has finished her duty to

the child for the day. In case he is ill, he is sent to the appropriate hospital, or if he is dirty, he is sent home. After the medical examination each child is given a sponge bath and is then dressed in state-owned clothes.

There are three groups in each nursery. Those belonging to the first group are infants who have not as yet learned to crawl; their life is a simple one of eating and sleeping. As soon as a child can crawl he is immediately transferred to the second group in which formal education is really introduced. From the age of nine months to a year onward he is systematically taught to be self-reliant. The slogan of every *crèche* worker is "Do nothing for the child which he can do for himself."

The real idea back of all education is to teach children to cope with their environment, which means that they must learn to work. This is true in this country as well as in Russia, and so the Russians are unique only in that they start such training sooner than we do. Instructors are all primarily concerned with teaching habits, especially the habit of work. They are not only faced with the problem of teaching new habits, but with the breaking of old ones which are of little or no use to the pupils. It is the purpose of Russian *crèche* psychologists to teach habits to their children which will not have to be broken, and thus save them much trouble in later life.

To begin with, their daily physical lives become a matter of routine and, as a matter of fact, occupy most of their time. They are taught to eat certain foods at regular intervals and to feed themselves. Learning to handle the spoon and cup is a part of the first training of the second group, and by imitating their teachers and each other they learn very quickly. They learn in the same way to wash themselves, and before they are very old they can dress and undress themselves. By the time they reach three years, they know how to make their own beds, set their tables, wash their dishes, clean their rooms, wash themselves, and brush their teeth, and they do so without being told by their teachers or parents. Many American children are unable to do most of these things when they first enter the public schools, and even if they can, they usually have to be told. Such inability to cope with the environment, according to Russian pedologists, is simply a lack of proper training, and training in the case of such very young children is a matter of play. Work and play are the same to a child unless he is taught otherwise. If a child thinks that it is a treat to use a dust cloth, there will never be any trouble about teaching him to dust his room, and if he is not told that his duty is to have clean hands, he will think it a kind of game.

The first principle in teaching, therefore, as the Russians see it, is to make the child want to do the things he is told by never letting him get the idea that there is any difference between work and play. This may sound difficult, and certainly its success largely depends on the tact of the adults concerned. In reality, children imitate their elders; the teachers and parents must first of all discipline themselves, and then they will find that the children automatically learn to do likewise. Every teacher has noticed that a child tries harder to learn to read when he comes from a home in which the parents make reading a part of their daily lives; but if the child knows that the adults in his home do not make use of books and are inclined to pay little attention to newspapers, he himself will not try so hard to read and the teacher's job is much more difficult. In the Russian *crèche* where the teachers play almost as big a part in the child's life as do the parents, the matter of establishing good working habits is much simpler than it is in this country.

Real toys and free play hours are also an important part of the *crèche* child's life, and it is in this field that we find Soviet methods most interesting. For example, every Russian child is given brightly colored wooden disks of varying size with a hole in the center which he arranges on a string or a stick as he likes. These are easier and safer to handle than beads and have the same fascination. They also serve a valuable function for they tend to develop muscle co-ordination, and the child by playing with them can sooner button and unbutton his own clothing and shoes. Learning to put toys back in their places can be made as much fun as taking them out; thus the idea that neatness is a duty never enters the head of a Russian child.

Another thing which is a part of *crèche* play is games involving water, which we usually avoid for obvious reasons; the Russians maintain that if a child is not allowed to play with water and spill it about, he will never learn to handle it properly. So at least once a week large tubs of water are put into the playrooms and the children are given buckets, cups, and pipes, and are allowed to transfer water from one vessel to another. They soon learn to handle it without spilling, and they also learn to sail boats. I noticed that it was not unusual to find that near the end of their playtime most of the children would be sitting in the tubs or splashing each other. The trouble of drying them and giving them fresh clothing was considered negligible in comparison to the benefits they derived from learning the properties of water and the fun that they had by playing with it. The fact that they are much better fitted to wash themselves compensated for the disadvantages incurred through a wet nursery.

The main task of the Soviet government today is to destroy the

concept of private property. To many of us that may seem an unnecessary and perhaps a pernicious thing, but in any case it is an important factor in the training of *crèche* children, and it insures one thing, namely, that they will not be selfish, and thus the main motive in quarrels is removed. Again the communal concept of property is taught by means of toys in the playroom. One of the favorite toys for *crèche* children is blocks, but they are not given small blocks such as we know in this country, but rather blocks of such a size that building anything requires the co-operation of two or three children. In defense of this system it is maintained, and quite correctly, too, that children like to play with large objects and that they thereby learn how to play with one another.

All toys cannot be large, though, and so many are for individuals. The children soon learn that any toy with which they are playing at the moment is theirs, but only for the time they are using it. When a child drops a toy and turns his attention to something else the toy is given to another. If he cries and wants it back, it is given to him again until he again tires of it. This is repeated again and again until he learns to expect that anything with which he is not playing is the property of other children. In opposition to this idea in the playroom, objects such as clothing, soap, towels, toothbrushes, and spoons are individual, and are never used by others. This is partly due to the fact that each child has the same sort of commodities, and partly because communism means that all persons have a right to the necessities of life and an equal chance at the luxuries.

The most important method of teaching by means of toys is the creating of what the Russians call "complects." Complect is a coined word which means the building up of certain given materials such as blocks and dolls to represent any given phase of the child's life. All children do some such thing naturally when they play house, pretend to be mothers and fathers, and use their dolls as children. Russian children are taught to build little houses and apartments such as they live in, to furnish them, and to act out the life they know at home. When they have become completely familiar with one complect, they are shown how to make another with the same materials. In case any new materials are needed they are supplied as the children realize the need for them. In this way they represent co-operative stores, farm life, and city life as they know them.

Russian psychologists have done a great deal of research in the line of *complects*, in order to discover what materials are best to give such young children, and what *complects* they can build up which will be most beneficial to them when they learn to read and go to

kindergarten and grammar school. They emphasize in the training of children that they should always play and act in circles and that the teacher never be in the center of the circle, but be a part of it with the children. This idea is carried on even in many ordinary schools for older children, because they grow less tired when they are not placed in rows, they learn more easily from each other and their instructor, and no child suffers from being far from the center of interest. In addition, they emphasize that all toys to form complects must represent phases of actual life. There are a few exceptions to this such as the representation of farm life by city children.

Telling fairy tales is strictly forbidden in Russia, for the Soviets claim that there are enough food for imagination and enough strange facts in life to supply the needs of anyone and that it is much better to tell beautiful stories about realities than to run the risk of having the child think you do not tell the truth because you have told him impossible tales. Following this principle, the Soviet government has made many beautifully illustrated books, written in the simplest of language, which tell stories from the lives of real people and real animals in the world. These books not only tend to feed the imagination, but they also give an idea of the peoples of other races and nationalities. Good reproductions of famous works of art are shown them, and at least once a week the children are either taken to an outdoor concert or listen to good gramophone records of classical music. There are only a few places in the whole of Russia where jazz is allowed to be played, and this is for the benefit of foreigners.

Every *crèche* is in a sense an experimental institution because work with such young children is quite a new educational phenomenon, even in Germany where it has existed the longest. However, there are special experimental *crèches* attached to the Institute for the Protection of Women and Children at Moscow, and it is in these that the main research is being done. All available material on the children's activities in their daily lives has been studied from the following points of view:

1. What organs and muscles are used in a given occupation?
2. What functions are trained by that occupation?
3. What habits are formed?
4. To what extent is that occupation stimulating the creative ability of the child?
5. To what extent is it furthering collective action?
6. What amount of attention is necessary on the part of the child and what is the nervous tension involved?

As a result of this analysis materials for play are distributed into the

following catagories: (1) materials for training the larger muscles; (2) materials for training the smaller muscles; (3) materials for quiet play (these materials must be familiar and pleasant to the child, thereby aiding in the development of his attentive faculties); and (4) materials which aid in developing the reasoning powers, such as materials which cater to the child's ability to combine objects in order to gain a given end.

In order to develop collective action in children, their environment has been divided into two main categories: (1) materials which require that more than one child play together, and (2) materials which require individual action, but from which can be learned reactions which will involve others. Learning to handle pencils and crayons or to cross a busy street successfully, though matters of individual attention, are in reality the groundwork in experience for collective action.

The necessities of a child's life and his toys must be very simple and few in number. Above all they must not be changed too suddenly. When very young children experience any too sudden change, they find it difficult to readjust themselves and their progress is retarded. The Russian *crèche*, therefore, establishes a basically simple environment. As the children learn to know it, and how to function in it, it is gradually modified until they learn to cope with any conditions with which they may be faced. This is obviously better than giving the child a complicated environment really meant for adults, in which he could not possibly function efficiently.

In determining at what rate new materials should be introduced to children of *crèche* age, the Soviet psychologists observed mainly the tension shown when they were handling various amounts of new material which were introduced at varying but definite intervals. They also considered as an important factor in their experiment the rate at which the untaught and unguided actions of the children overcame the difficulties in the details of their play. They found that the amount of nervous tension and the quality of attention bear more or less directly on each other, for there are few ways of stimulating artificial interest in such young children. As a result of this experimentation, the following conclusions have been drawn: (1) In normal groups of 20 children, from seven to fourteen months of age, sets of material should be gradually renewed not less than twice and not more than three times a year. (2) In normal groups of 20 children, from fourteen months to four years of age, sets of material should be gradually renewed not less than four times and not more than eight times a year. It is best, however, to have about five full

changes for older groups during one year: first, in the early autumn, when they come to the *crèche* after their parents' holiday; second, in the late autumn, when the weather requires that they spend much of their time indoors; third, in midwinter, when their lives are spent definitely indoors; fourth, in the spring, when they begin to go out again; and fifth, in the summer, when all of their playing occurs out of doors.

At the beginning of the year, in the case of older groups, materials for individual play are alternated with materials requiring the attention of two children. Materials requiring the attention of three or more children and complicated forms of co-operation should be introduced only in the second half of the year, while materials which tend to sum up the group's achievements in collective action are given only at the end of the year. The reverse of this order is followed in taking away materials.

During the day, objects for play and instruction are distributed according to the hours of eating and sleeping, for these are the two main processes which affect the child's mental and physical well-being. Therefore, simple materials well known to the children and requiring no special effort on their part should be given before feeding and sleeping. Materials requiring complicated mental and physical functioning should be given after the children have eaten and slept. However, directly after feeding they should be given lighter material, requiring no mental effort and easy physical movements in order to use up that surplus energy accumulated while they were at table, and still not disturb the digestive processes. Before the end of the play period intricate toys should again be exchanged for objects inducing easy and quiet play.

The Institute for the Protection of Women and Children has also made many interesting experiments relating to a child's metabolism, and has modified the daily program in the *crèche* accordingly. Briefly, their results may be stated as follows. Since 1929 the five-day week has been introduced, and it affects this schedule only in so far as it tends to eliminate the nervous inertia characteristic of the last day of the week because the holiday comes earlier in the week when the children are less liable to be tired of the more or less intensive training in collective action. There is still the same nervous tension on the day after the holiday though other days are normal. Care of the children, however, is now somewhat complicated because various individual children have their holidays on different days of the new week and consequently many *crèches* are always open. As a result, the experimental *crèches* are

now evolving a system which will eliminate the possibility of a child's missing anything because his day of rest cuts into group activities.

On Monday, as on other days after a holiday, children are more excited than usual. Because of this the first part of the day should be made easier, and the psychologists have found that dolls induce the quietest kind of play. Drawing or at least the handling of pencils and crayons is the simplest type of organized occupation, if it is not continued for more than five or ten minutes at a time. After drawing, time should be allowed for playing with dolls. During the afternoon, the continual and slightly exciting movements which result from playing with toys on wheels, such as wagons, are the best form of unorganized play. This should be followed by five or ten minutes of listening to good music. Encouraging the children to talk, which includes the teaching of pronunciation and the illustration of the meanings of words, should take from ten to fifteen minutes more of the time allotted to organized occupation, because it is not only instructive but also gives a chance for small movements. The rest of the time should be given to quiet play. As a rule, after talking lessons children are given large pieces of brightly colored cloth with which they drape themselves and each other.

From the point of view of metabolism, Tuesday is a normal day, so a full program of organized occupation can be used. Work with plasticine is advisable, because it requires considerable attention on the part of the children, and its nature is such that it can be continued for comparatively long periods of time, from twenty to thirty minutes. It is, of course, preceded by play with easy and well-known materials such as wooden cups or wooden eggs. During the afternoon it is best to introduce music to which the children can march or dance as they like, and to give them simple musical instruments such as trumpets and tuning forks for their unorganized play, since music teaches the value of tone and has a quieting effect without requiring them to dispense an undue amount of energy. Large building blocks and complicated construction material made of metal can be used for half an hour of organized play without tiring the children.

Wednesday, also, is a normal day from the point of view of metabolism. Occupation with sand can be used for organized play and is considered so difficult that it should not be carried on under direction for more than fifteen or twenty minutes. It should be preceded by easy materials for creative play, such as representation of family life, if the children have already learned that *complect*. Another good type of easy recreation is the pushing of wagons containing other children because it stimulates the larger muscles. In the afternoon short talks about pictures, which the children are

shown, make excellent organized occupation. These pictures should either be painted on or pasted into albums made of thin sheets of tough wood, the edges of which are carefully rounded so that there will be no risk of the children hurting themselves or destroying the pictures. Looking at pictures requires a great deal of attention, and for that reason it should always be followed by simple toys which will amuse them for a long time. Dolls are the best to serve this purpose.

On Thursday morning the collective bath takes place, and for this purpose the two older groups of children are united. In such a large group the easiest way to keep the children quiet while they are waiting for their baths is play with dolls. Musical occupation which requires close attention can come later in the morning, and it should be preceded and succeeded with easy materials for creative play. Learning to climb staircases is a difficult task which should be taught in the afternoon. In each nursery I visited there was a staircase of ten to twelve steps in the corner of the playroom, and the children were encouraged to climb the stairs and slide down the slide on the opposite side. This type of exercise, though rather difficult for children, at this age amuses them greatly, and therefore can last for more than half an hour. Introduction to the Pioneer Movement, the Russian boy and girl scouts, which involves marching with music, flags, and drums can also be used for organized play.

Friday is another normal day when children can be given the full program. Learning to handle water is a good organized occupation. After they have been dried and redressed, it is necessary to encourage extremely quiet play for the rest of the day. This is determined by the desires of the children and the time of the year.

Saturday is not altogether a normal day, for the children show a slight disposition to inertia. Because of this, they should be allowed to choose materials for individual play. However, it is best to give them wooden albums of pictures and allow them to use them as they like and even to encourage them to go into rooms by themselves if they so desire. The only organized form of occupation which should be given on Saturday is tea drinking, which should come about half an hour after dinner is over. At this time, they use glasses instead of the unbreakable cups such as they have at their meals.

It cannot be denied that this simple play program instructs, and at the same time manages to keep the children from becoming too nervous due to overexertion. There are, however, certain points which we may be well justified in questioning. For example, it seems that all these phases of occupation may be amusing to the children, but by their very nature they must subordinate individuality

for the sake of mass action. This is a criticism which can also be made of the pedological methods of any school, but it seems especially to apply to the Russian *crèche*. However, to my mind, this criticism is not altogether justified, because there is certainly a definite attempt in the *crèche* to develop individual personalities. In the corner of each playroom there is always a little house in which any child can go at any time and be alone. As soon as he seems to lose interest in the work he is doing, he is not only allowed to enter the little house or go to another room, but it is suggested by the teacher that he do so. He can take a toy with him, or he can be idle if he likes. It is not unusual to see a solemn-faced child sitting by himself at any hour of the day.

To illustrate the Soviet attitude on collectivism versus individualism, I can do no better than quote what Dr. Rudnic, a Moscow child specialist, said to me: "Persons reared individually are social burdens until they become accustomed to living on an equal basis with others and lose any egotism or selfishness which they might have acquired because of a secluded upbringing.". She said that in Soviet Russia the purpose is to rear children who will be social and useful even before they can talk, and for this reason the Russians have attempted to apply collectivism not only to the children's daily chores but also to their recreation. Toys for individuals exist in the *crèche* because there are individual differences in children. But most of the toys require a certain amount of collective effort in order to be enjoyed. Building blocks, puzzle games, and the like are purposely exaggerated in size, partly because children like big and heavy things to play with, and partly because the size and weight of these toys require co-operative effort on their part. The *crèche* children eat, play, sleep, and perform all other physical functions in groups. Painting, drawing, and singing are never taught to individual children of *crèche* age, but always to groups of them, for they not only enjoy such instruction better when they are with other children, but they also learn many valuable lessons in co-operation from each other. Creating a herd is not the object of the training in collectivism, because the Russians are trying to encourage originality by allowing the children free reign with their intellect. This means that they not only allow, but persuade, them to use their hours of free play in creative drawing without models, in making up their own stories if they are old enough to talk, and in inventing any games which may be necessary for their recreation and happiness. During the hours of free play they do as they like, even though they all play in the same room, unless, of course, a child goes off into one of the little houses or behind one of the screens which are provided for those who

wish to be absolutely alone. Whenever a child sulks or tries to hide, he is shown how to get away by himself. The children may express their own personalities as they wish, but they must not be selfish. A child may play with a toy as long as he likes, but when he is finished he must give it to another. They do not wish to stress collective thinking too much, for Soviet Russia needs individual thinking and collective action to carry her into a successful future. What they are trying to do is to instil into the character of every Russian child that he must not own anything at the expense of his fellows and that his society, and therefore he, will find it advantageous to co-operate in all activities.

Another question which always arises in the mind of educators in the Western world is, What is going to happen to the homes of the Soviet Union now that they have installed state nurseries as well as schools? Occasionally, we hear tales of how the Soviet government expects, and is trying, to take the children completely from their parents. Such ideas are alarming, for certainly the logical conclusion of Marxianism would be that the state be all-powerful in social matters which would perforce include the rearing of children. Books on this subject have been written by expert economists and sociologists who have all come to different conclusions. Personally I do not think that I can agree entirely with any single one of them. The matter is very complex, but it seems to me that the Russians are applying Marxianism to their country and not their country to Marxianism. The Russians are above all good parents, for they are sacrificing luxuries and sometimes food and clothing so that their children may have what they need. This is the biological reason why I do not think that the Soviet state can supplant the home.

There is another reason, too, and that is purely an economic one. With the present budget of the Soviet government, it is not even possible to have as many nurseries and schools as they need let alone enough to effect materially the status of the home, and it does not look as though they were going to have enough money for such pursuits in the near future. Nor do I think that they are trying to make any such elaborate social changes, for they are spending as much time, money, and energy on educating the parents regarding their children, as they are spending on the children themselves. As important as the *crèche* is in educating the new generation, it is a far more powerful factor in the lives of the adults concerned, and, therefore, instead of separating the parents from their children, it really has the opposite effect. In this regard, if in none other, I think we can learn from them.

Preparatory Functions of Kindergarten

By W. C. BAGLEY[2]

In speaking to a group of kindergarten teachers, I necessarily lack a certain measure of confidence that I have, at least sometimes, when I discuss educational problems with other groups of teachers. The confidence in the latter case comes from the fact that I have served as a teacher on all of the so-called "levels" of the educational service except one. I have tried to teach little boys and girls to read and write, and I have tried to teach upper-grade children and high-school pupils and college students and graduate students; but I have never been a kindergartner. And so when I come to your problems I am in, what is to me, an unknown field.

There is one inference about your work, however, that I feel perfectly safe in drawing from my experience in other fields. This experience has convinced me that there is an inverse relationship between the difficulties of teaching and the age and attainments of those who are being taught. In a very real sense, the hardest teaching that I have essayed has been the teaching of the youngest pupils, and the easiest has been the teaching of the mature students. When I fail with mature students they are usually able to teach themselves, and not infrequently they can turn around and teach me. But as one goes down the age-scale, I have found that the responsibilities of the teacher increase in what the mathematicians call a geometric ratio. Hence, my inference is that the kindergarten and pre-school teaching are the most exacting and the most difficult of all.

It is always dangerous to say of a given teaching field that it is more important than another. And yet the public and a goodly segment of our profession seem to believe that the more advanced age-levels represent the more important phases of education. In this view I am unable to share. Something approaching an equality of importance attaches in my mind to all teaching positions. You cannot make discriminations among different groups of teachers without implying discriminations among the pupils or students that are taught by these teachers. If you say that a high-school teacher's job is more important than a third-grade teacher's job, the implication is that the sixteen-year-old is more important than the nine-year-old.

If one must make distinctions and discriminations, the available evidence indicates that it is the teacher of children on the earliest age-levels whose work must be considered as the most important, just as it is the most difficult. We have, in other words, some

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evidence that it is in the earliest years that the most profound changes can be made if one knows how to make them. Indeed, the fundamentally formative character of the experiences of the child during the first five years of his life seems now to be quite beyond question.

It is not necessary to review in detail the numerous investigations that justify this conclusion. There are two or three, however, that appeal to me as offering evidence that is especially convincing. We have, for example, some of the more recent investigations that have examined the possibilities of modifying through appropriate training that important trait known as the intelligence quotient. These studies prove beyond cavil that the intelligence quotient can be modified by nurture, that a child who is brought up in a favorable environment is likely to have a somewhat higher intelligence quotient than he would have if brought up in a poor environment. The difference may be as much as ten or twenty intelligence-quotient points, or enough to spell the difference between a person of average mentality and a person of superior mentality. The general trend of the evidence, however, suggests that it is the early environment, the nurture of early childhood, that exerts the most significant influence.

It is impossible to say at the present time what particular features of an environment make it an effective stimulus to that type of mental growth which is reflected in an advance of the intelligence quotient. Environmental influences include all of the non-native forces that operate upon the individual: food and shelter, companionship, playmates, playthings, as well as deliberately planned care and training and discipline. Some day, beyond doubt, we shall know much more than we know now about this whole matter. Indeed, concerted efforts on the part of the school and home may make it possible to raise appreciably the general level of mentality in the population as a whole. It is practically incontestable now that this level can be raised by appropriately controlling the environment in the early years; the problem seems to be primarily one of devising effective methods of control and of applying these both in the home and in pre-school institutions.

That not only intelligence, but also other fundamental traits, can be determined in a significant measure by early training is a reasonable hypothesis for which there is an abundance of supporting evidence. The advantages that go with the right kind of nurture in early childhood seem to be particularly significant in developing the moral traits. Here the influence of the home is doubtless the most pervasive and far-reaching, but this does not mean that the forces of organized education have no relation to the problem. One of the most promising characteristics of the pre-school movement is

its close connection with parental education. It represents a means of gradually improving the conditions of the home and of greatly increasing the effectiveness of home education.

The large possibilities inherent in a program of close co-operation between organized education and the homes in which young children are being nurtured are suggested by an investigation which a student of mine made several years ago relative to the effect of religious training on what may be called the "moral" control of individual conduct. This student had a theory that the influence of religion upon morality could be shown by comparing the criminal population with the law-abiding population. He found in the reports of one of the penitentiaries of the state the facts regarding the church affiliations of the prisoners, and he found in the census reports the facts regarding the total membership of the different religious denominations in the district which the prison served. He then found the ratio between the number of convicts belonging to each denomination and the total number of people belonging to this denomination in the district. He brought me an interesting table showing that in one denomination apparently one in every one thousand communicants landed in the penitentiary; in another, one in every fifteen hundred; and so on through the eight leading religious bodies, the best of which had a record of only one in four thousand of its members in prison. It was an interesting fact that one church apparently kept four times as many of its communicants out of prison as did another church, but I could not see that we could draw any conclusions from this finding.

The student, however, was not discouraged. He got the same data from the second of the penitentiaries of the state and made the same computations. In a few days he laid before me another table alongside the first that he had prepared. It was with a good bit of glee that he pointed out to me the similarities of the two tables. There were some differences in the ratios, but the denomination that made the best record in the southern district of the state also made the best record in the northern district; the denomination that made the worst record in the south made the worst record in the north; and the remaining six denominations ranked on the second table in precisely the order in which they ranked on the first table.

It was all impressive, but still it might not be in any way significant. The results, however, seemed to warrant a continuance of the study, so I suggested to the student that he get data from other states. He did this, and every week or so he would bring me a new table. The results were almost uncanny. As each new table appeared, the denomination with the best initial record was seen to

hold its position; the denomination with the worst initial record remained consistently at the foot of the list; and the others, with a few minor shifts of not more than one rank in any one case, also retained their original stations.

The problem now became one of finding, if possible, the cause of these uniformities. Were there really important differences in the doctrines or the discipline of these religious bodies which enabled some of them to exert a much more fundamental control over the conduct of their communicants than did others? Or were the differences due to factors entirely apart from religious influences?

It seemed at first glance that this factor of selection offered the best explanation for the facts in the case. The denomination with the best record was, in a measure, limited to the intellectual groups, and one of the denominations with a poor record recruited its members, so to speak, from the highway and byways. But all this was offset by the fact that another denomination that stood low was also somewhat selective, while still another well up on the scale was thoroughly non-selective.

We puzzled over the problem for a long time without getting any clue to its solution. Finally, I decided that we must call in expert advice, so I took the tables to Henry F. Cope, at that time Secretary of the Religious Education Association. It took only a few minutes to get the problem before him, and the moment he grasped the conditions revealed by the tables he had the solution. "These denominations," he said, "stand in precisely the order of the emphasis that they lay in doctrine and in practice upon the careful bringing-up of children. It is the educational factor primarily that causes these amazing uniformities."

He went on to give the evidence and the evidence was convincing. The relative seriousness with which the problem of child nurture and training and discipline was regarded in the teachings and practices of these eight denominations seemed without question to be the only key to the situation. In short, religion seems to be a potent determinant of fundamental morality in proportion as it impels to the careful nurture of the young.

Now, of course, the careful nurture of the young will be increasingly effective in the degree that accurate knowledge enlightens the sense of responsibility upon the part of parents to provide this careful nurture. Undoubtedly some of the dogmas of religion, or at least some of the dogmas of some religions, reflect fundamental lessons that have been winnowed and refined in the long course of human experience. "Spare the rod and spoil the child" is probably sound advice in a certain proportion of cases. To lapse into the jargon of

present-day science, one might say that this precept is 50–per cent sound or 60–per cent sound or perhaps even 80–per cent sound. But we should all agree that it is not 100–per cent sound.

What the future promises is a gradual accumulation of facts and principles regarding the care and culture and discipline of the young that will reveal in a fairly reliable fashion the degree of trust that may be placed in the precepts and generalizations which have come to us from the past and some of which, as I have suggested, represent the funded wisdom of the race. Some of these precepts and generalizations, however, are at best only half-truths, and still others would be effective guides for action only infrequently.

We have, in the new type of child study that has developed so remarkably within the past few years, a rich promise. Its investigations will, I am sure, yield results of very great value especially to the fields of home education, pre-school and kindergarten education, and primary education. With the accumulation of well-tested principles, the solution of the important problems of these basic fields will proceed apace.

I should wish to suggest, however, that, while the teachers in these fields should avail themselves of the increasing scientific knowledge concerning children, such knowledge is not to be regarded as the major element in the teacher's equipment. Sympathy and devotion will still remain, I believe, the fundamental factors in the nurture of the young; and that indefinable quality known sometimes as insight, sometimes as intuition, and sometimes as plain common sense will always be essential to the most effective application of the findings of science to the solution of human problems, and particularly to the solution of problems at once so complicated and so fundamental as those concerned with child development.

Some Problems in Teaching Reading

By MICHAEL WEST[3]

I FEEL CONSIDERABLE DIFFIDENCE in discussing with you this subject of reading in the mother tongue. I have no record of startling successes to report to you, no cure-all to recommend, only a record of attempts, not wholly successful, nor yet wholly unprofitable, and a plan for a fresh attack on the problem as soon as opportunity permits. I hope that in the record of our attempts and in the questions to which they give rise, you may find something suggestive and useful.

[3] Teachers College, Dacca, India.

Let me begin by admitting that the task of teaching a child to read in the first instance is a vastly more difficult one than that on which I have been mainly engaged: teaching the reading of a foreign language to a child who can already read his own. Teaching the reading of the mother tongue is more difficult in itself, and it is made a great deal more difficult still by the circumstances and conditions of the task. For the foreign-language children are older, more selected, a fairly homogeneous class; they know how to work together; they have the idea of study.

What is the reading class like? I do not mean in the kindergarten departments of your elegant university high school, but in the little village school out in our "wide open spaces." Perhaps even in America you will have some schools of this kind which I am going to describe. The teacher has a class of twenty or more children. They are completely unsorted, of all grades of intelligence. Some know a smattering when they come; most do not. Even if they start level, after a very few weeks they have scattered out over a wide range of achievement and failure.

They are also regrettably young. It is not a thirst for education which has put most of them in the school, but the reasonable desire of their mothers to have a little peace in the middle of the day. Consequently, they have no idea of working together as a class, and, as you well know, below a certain age it is very difficult to get children to work together. Lastly, let it be confessed (a thing not unheard of even in your country) that most of our primary schools are one-teacher schools, and besides these infants the teacher has other classes of children to attend to at the same time.

What happens, under such circumstances, to all that paraphernalia of flash cards, wall-charts, word-frames, and all the rest of it in which the methodology books delight; and to the elegant methods which one sees demonstrated in the teacher-training college, one skilled teacher with an obedient, well-sorted group of professorial offspring, and nothing else in the world to worry about? Those things just do not work, or only for the few minutes that the teacher is with a particular group, if then. And what are the children to do when the teacher is not with them?

We want some form of learning to read which the children can do under a general supervision and individual assistance when the teacher is there, and can carry on in some fashion when he is not there, when he is looking after the bigger ones; something which will enable an infant class to be dealt with as an agglomeration of individuals. So we welcomed the Montessori idea, as far as it went. But we needed more of that sort of thing—learning devices which these

children could play with and use to some extent alone. Our first attempt was to collect all of the self-teaching devices in reading which we could find, then to translate them into Bengali, and adapt them into a form which could be cheaply and easily made, even made by the teacher himself. Many of these devices are probably known to you. We had a big find in a convent in Calcutta, mostly English-made stuff; but our largest and best lot was discovered in a wonderful little private school up in the Himalayas run by a Miss Le Place, who had a real gift for inventing that sort of thing. Lastly, we invented some other things ourselves. These are a few of the devices that worked best: (1) sets of cards with objects and name, (2) sets of cards with pictures and name, (3) large pictures with spaces for names, (4) name (or sentence) and picture rings, (5) word and picture cards, (6) jig-saw puzzles with titles, (7) the cork game, and (8) the butterfly game applicable to reading or color or arithmetic.

Now most of this work of ours was wasted. The scheme was too complicated; the apparatus was too much trouble to keep in order and put away. Those objections do not apply to your circumstances, with plenty of cupboards, and with the children trained to keep the things in order themselves. Nor have you got white ants.

Our next attempt arose in a curious way, but led in the same direction as before. There are large numbers of illiterate women in the zenanas, wives of quite well-educated men. As these women cannot go to school because of their purdah restrictions, the government employs a staff of zenana governesses who go around to various centers at which these women congregate. These zenana teachers are, for the most part, untrained. Moreover, they can visit their pupils only at intervals—once or twice a week; and their pupils, being of very various degrees of attainment, cannot be treated by class methods. The problem set us was to provide these teachers with some sort of "correspondence" lessons which they could hand out to their pupils, so that at one visit they might run through the assignment with the pupils, and might check the pupils' work at their next visit some days later. We made various courses, for example, in hygiene and in arithmetic. A pupil of mine, Pubodh Dele Chamhuri had just completed a word-frequency count in Bengali (a valuable study just now being published). With the help of this we prepared simple reading material for those who already possessed the elements of reading ability.

The main need, however, was to teach the elements of reading. For the general experiment to be of any real use it was necessary to prepare a course in reading. Now we had before us the experience

gained in teaching English reading to Bengali children. In that experiment we had endeavored to produce a book which should be, as far as possible, self-teaching. The alphabet is built up gradually in actual use; for example, the child begins to read stories when he knows only sixteen out of the twenty-six letters; he reads meaningful material from the first, even when he knows only five letters. Such early introduction of meaningful material was rendered possible by selection of vocabulary (so far as was possible) according to word-frequency.

The general plan of each lesson involves (1) letter recognition—by underlining one or two new letters in a group of mixed letters, (2) word recognition—by underlining the word in a group of sentences, (3) sentence reading—to practice use of the new word, (4) a pictorial exercise in which the child responds by check and cross, or by numbering, or by underlining answers. This exercise insures reading with comprehension.

The problem of the irregularity of English spelling was dealt with by the use of a very simple system of phonetic notation. It is also to be remembered that in learning to read a foreign language the new word and its printed representation are encountered together, so that the problem of recognizing the printed representation of a speech word already known does not arise. I am still inclined to regard a simple subscript phonetic notation of this kind as a possible solution for the problem of irregular spellings in English. It is more practicable, to my mind, than the Craigie system which involves the learning of complicated rules of spelling, and preferable to any other system which interferes with the normal printed appearance of the word. Moreover, it avoids all that interference with the ideal selection of vocabulary which is inseparable from any attempt to introduce groups of word-types: *rug, bug, mug; enough, tough, slough;* and the like. The Bengali alphabet is phonetic; so here our task was easy; but it has thirty-nine letters; so the task was long. It seemed evident that the ingress of new words might be more frequent in this case when the pupil had only to acquire the recognition of a known word and not, as in English, the recognition and the word-meaning.

We constructed a set of lessons much on the same lines as the English primer, but with a higher new-word density, a larger proportion of response-exercises, and fewer mere reading-practice exercises. Continuous material was introduced earlier. The work was written, tried out, privately printed, revised, tried out, privately reprinted, and again revised and printed a third time. It has not been altogether satisfactory. It is probably a better constructed book than any other vernacular primer in India: that is not difficult, for the

standard is low. But it is not good enough. Why was it not satisfactory?

One trouble was that the book was accused of being written in "bad Bengali." The fact is that the Bengali language, like most languages in the world except the European tongues, has not "settled down," and no one can be quite sure as to what is really standard. The Calcutta man says that a phrase is "East Bengal dialect." The East Bengal man replies that his phrase is perfectly correct and that the Calcutta man's alternative phrase would be quite unintelligible to pupils in East Bengal. One might likewise compare British, English, and American English though in a far less degree.

The second fault has doubtless been noted by you already. To start by building up the alphabet may be justifiable in the case of English for the foreign pupil who has already the idea of reading in his mother tongue. But these children have not got the idea of reading, and by starting with the alphabet we tended to give the wrong idea that reading is a process of letter-deciphering, whereas it is a process of word-recognition, and later of phrase-recognition.

We should have started with something of this kind. Just how this principle may be applied to a self-teaching work book of this kind, I am unable to say. It is a matter for experiment. The idea of using well-known street-notices and the names on packets and advertisements is rather attractive: Dean Gray mentions it in his report on the teaching of adult illiterates. Identification of phrases in a previously read story is another device, and there is also the "silent drill" exercise which we have used in the English reader.

We were tempted into this mistake by the phonetic nature of the Bengali alphabet. On the other hand, I am not prepared to go so far as those who keep out letter study altogether. If an adult meets an unknown proper noun in a passage, what does he do? He may read it syllabically if it is an easy one, but must finish off with letters. And if it is at all long or difficult, he may attack it by letters.

Again this word-recognition is not purely by shape, but is affected greatly by the initial letters, and the projecting letters. If the child does not do some effective letter study he is very liable to make wild guesses and misreadings. I feel that after a short stage of word- and sentence-recognition so as to get before the pupil an idea of the goal, the alphabet might be built up in the same manner which we used.

We made a third mistake, however. I question the wisdom of the increase of new-word density. The argument on which it was based was perfectly sound, but it was the by-product of the increased density that was objectionable. There was not enough repetition. The transition from the letter stage to real reading comes, as it

seems to me, by a gradual accumulation of words which have become so familiar that they are known at sight, so that attention can be concentrated on the outstanding new words which need more detailed study. At a very early stage such words as *the, them, was, were, not,* are recognized instantly. In the English course we aimed at repeating each word three times, and this, with the introductory drill of new words and the review of vocabulary and the supplementary "no new word" readers, seems to be adequate. But in teaching the reading of the mother tongue I feel the need of a book in which the new word comes again and again and again till it becomes familiar.

These are the things which we have in mind for a fresh attempt as soon as opportunity occurs. We need a self-teaching reading primer, a thing on which the child, or illiterate adult, can work alone, unaided. Unlike most of the work books found in this country, it must be in color, no elaborate or time-wasting responses: it is teaching reading—not coloring or paper-cutting. Obviously, such a scheme is impracticable, but how near can we get to it? How self-supporting *can* the book be made?

There are so many other things I would like to discuss with you, so as to "get your reaction." I want your experience as to the right stage for beginning silent reading and skimming. What is your experience of reading aloud in relation to the teaching of poetry and appreciation of complex rhythm?

Then there is inferential reading in the mother tongue. Probably one-half of our passive vocabulary in our own mother tongue has been got by meeting words in reading, and guessing their meaning because we cannot be bothered to use a dictionary. This laziness is natural, justifiable—universal. But to what extent do we thereby acquire vague and sloppy notions as to the meaning of words? You have frequently read the words "Mahatma Gandhi" of late. Precisely what is the meaning and connotation of the word "Mahatma"?

Now if this be so, ought we not to do something to train children to guess accurately; also train them to realize the inaccuracy of a guess made in an unhelpful context, and the need of looking the word up in a dictionary? A little training in the principles of etymology might be helpful, and an inferential reader specifically designed to include "hard words" in a text specially written so as to give adequate clues for those who have the sense to find them. That is the idea on which we are at present working in foreign-language reading. Do you think we ought to do something of the same sort in the mother tongue, too? At least, I may hope to have given you some points for discussion, and probably for disagreement with me.

An Educational Credo

By HUBERT McNEILL POTEAT[1]

I SHOULD LIKE TO REMIND YOU that the word "credo" means "belief," not "edict." I am issuing no divine fiat, no peremptory ukase. It is quite likely that some of you will disagree completely with me. Excellent! Only by honest difference of opinion and by dispassionate debate and discussion can permanent progress be made in education—or, for that matter, in any other field of endeavor.

In spite of our vociferous pride in good roads, mills, commerce of all sorts, I think it can hardly be denied that, save for religion, education is the most vitally important of all human interests. Conceptions of its necessary processes, its normal results, its vast unrealized possibilities are innumerable and widely divergent, and have always been so. Ask the first ten men you meet on the street what education really is, and the chances are a hundred to one you will get ten totally different answers—different not only in words, but in point of view and method of approach. Every man who writes a book or even an article on the subject feels an unconquerable urge to compose and print a definition of education. I have read several dozen of these definitions, but only one of them seems to be completely satisfactory. I therefore cite it as my text. Its author is our most influential university president, Nicholas Murray Butler: "Education is that process whereby we fit ourselves to comprehend and to appropriate the whole spiritual inheritance of the race." If this superb statement is true, as I profoundly believe, then the result of education ought to be the ability to understand, delight in, and use everything good and beautiful which mankind has achieved through the long centuries. In other words, the result of education ought to be the highest type of culture, in the real significance of that much derided term. Culture has been defined by Matthew Arnold as "the ability to perceive, and the capacity to enjoy, what is excellent." Upon these two pronouncements, my educational credo rests. Permit me now to discuss three features in the contemporary educational landscape which appear to me to be actively hostile to that sound and thorough training of youth postulated by my two definitions.

[1] Wake Forest College.

First, then, pedagogical irresponsibility. I mean, in general, the bland complacency with which so-called experts enunciate new theories every other day, and the undiscriminating and hungry avidity with which those theories are swallowed, hook, line, and sinker, by school men and women all over the country.

The science of pedagogy is comparatively young. Pestalozzi has been dead a bare hundred years. But I think it will be admitted that in all human history no other science has in so short a time assumed so commanding a position or exercised so wide an influence upon the destiny of mankind. The reason is not far to seek. Men and women have always been interested in the proper training of their offspring. Well, here comes a man who claims to have made a careful study of the numerous problems which are associated with this training. Naturally, he is accorded an eager hearing. As time goes on, therefore, the number of such educational advisers increases, the public remains enchanted and beguiled by the sonorous and dogmatic pronouncements which issue from the pedagogical sancta sanctorum, and today educational "experting" is one of our most alluring and popular vocations. But every new science has always had to contend with the faker, the shyster, the adept who is vastly more interested in prestige and pelf than in the patient pursuit of truth. And everybody knows that one such faker not only can, but invariably does, make much more noise than a dozen honest workmen. The tragedy of the situation lies in the fact that the public is either too lazy or too ignorant to distinguish between sheep and goats, and, further, that the strangle hold which the new pedagogy has secured on all our educational processes makes it possible for the goats, as well as for the sheep, to guide our children's destinies.

No rational human being objects to experimentation, and everybody knows that no science can make any progress without experimentation. But, as Socrates said two thousand years ago, "There is danger that you may be experimenting, not on the vile body of a Carian slave, but on your own sons or on the sons of your friends." Precisely. The vivisection of animals has led to many invaluable discoveries in the art of healing human infirmities; but no man can estimate how much irreparable damage has been done to the minds and souls of little children by irresponsible pedagogical tinkering.

All of our great institutions for the training of teachers have practice schools. Well and good. If parents are willing for their sons and daughters to be used as laboratory material, certainly they have the right to submit them to the professor's scalpel and trephine. Moreover, in such schools the attempt is made, and, I dare say, successfully, properly to safeguard the experiments. But prospective

teachers flock in for preparation—are required to flock in, especially during the summer session, and they gulp down the provender so lavishly and dogmatically provided, frequently acquire a severe case of intellectual indigestion, and proceed to work it off by attempting, so far as the machine allows them to do so, to carry out in their own schools, with their own often limited ability, the policies and projects which they saw in such smoothly running operation at the teachers' college. And next time they attend the summer session they are confronted with an entirely new bag of tricks, informed that the repertoire of a year ago has been consigned to the trash heap, and made to believe that this species of prestidigitation, this now you see a theory, now you don't, this here today, gone tomorrow, this irresponsible and endless tampering with the souls of little children through the medium of alleged new discoveries—they are made to believe, I say—that all this jumble of novelty and nescience is progress in education. It is precisely the same sort of progress as that made by the engine of an automobile before the clutch is engaged. There is much noise and considerable wear and tear, but there is no movement.

Permit me to suggest another variety of pedagogical irresponsibility. It is the persistent and dogmatic assertion, in classrooms and in books and essays, of facts which are not facts, of so-called laws which have been disproved again and again, of theories whose utter lack of foundation has been repeatedly demonstrated. And the pity of it is that so many thousands of the men and women who sit enthralled at the feet of the unscrupulous pundits who are willing to go to such lengths in the mad scramble for fame are so blinded by the glitter and dazzle of specious and spurious greatness that they do not know that, instead of bread, they are being given, not even honest hard stones, but ephemeral and evanescent dust.

I quote, by way of illustration, two paragraphs from Paul Shorey's brilliant essay, "The Assault on Humanism":

> Indeed, my chief complaint against the assailants of Latin is their inacquaintance with, or their deliberate suppression of, the considerable literature in which these suggestions [previously made in the discussion] are worked out with discriminating specific arguments and concrete illustrations. Some years ago I debated a similar question with President Eliot. . . . He paid no attention to my paper at the time, and now he writes in the *Atlantic* in total disregard of the entire literature of the subject. I do not mean merely that he suppresses the bibliography and the mention of names: I mean that he neglects distinctions that have been pertinently drawn, ignores challenges that have been presented again and again, and reiterates fallacies that have repeatedly been exploded. In this President Eliot conforms to the general practice or policy of opponents of Latin and

writers on pedagogy. They either have not read the literature which they controvert, or they intentionally ignore it. They do not inform their readers of its existence, and they do not even tacitly amend their own arguments to meet its specific contentions.

The third volume of Professor ——'s *History of Education* . . . is only a typical and rather moderate example of the prevailing practice of . . . professors of pedagogy—in their books, as I know; in their classrooms, as I am informed. They not only argue as partisans against the Classics, but they systematically suppress both the arguments and the bibliography of the case for the Classics.

A further illustration of this curious and intriguing habit is furnished us by the oracular pronouncements of certain practitioners of pedagogical magic with respect to mental discipline. Shorey, in the monograph cited above, addresses these gentlemen thus: "You must not tell the public that the science of psychology has disproved mental discipline in general, or the specific value of the discipline of analytic language study in particular. For if you are a competent psychologist you know that it is false."

Similarly, the left wing of the educational theorists announced, a while ago, with a pomposity and a finality most impressive, that the doctrine of the transfer of mental power was buncombe of purest ray serene. The fact that this pronouncement has been shattered to bits by a succession of discriminating discussions, including many by educational experts and psychologists, has not abated one whit the left wing's noisy insistence upon a harassed world's attention.

I suppose it is chiefly the performances of the educational irresponsibles which led a recent contributor to the *American Mercury* to refer, in the first paragraph of a devastating article, to "the pedagogical brethren whose idiocies and quackeries have almost reduced education in America to the level of chiropractic."

In a report to the trustees of Columbia, President Butler said:

> Today there is a New Philistia . . . peopled by an active, restless and highly nervous company of men and women who have turned it into what the Prophet Jeremiah described as "the land of graven images, and they are mad upon their idols." These new and numerous Philistines are concerned with replacing discipline for indiscipline, scholarship for deftly organized opportunities for ignorance, thoroughness for superficiality, and morals for impulsive and appetitive conduct. . . . Where they have touched education—and they have touched . . . it at many points—they are reducing it to a costly pantomime. They are the blind leading the blind.

I have now attempted to discuss pedagogical irresponsibility as the first of three perilous factors in the contemporary educational situation. The second I mention is the incredible multiplication of the machinery of teaching and administration. Now I understand,

of course, that the tremendous increase of the enrollment in our schools within the past few years has made necessary a reasonable expansion of the mechanics of education. But we have had a most unreasonable and disproportionate expansion of the mechanics of education. We have enwrapped our schools and their faculties with mile upon mile of the reddest of red tape (thereby, of course, seriously compromising teaching efficiency); we have added cogs here, grease-cups there, wheels within wheels yonder; we have erected fine, commodious school buildings. I rejoice at this vast improvement in our physical equipment, but it is my profound and mature conviction, based upon nearly twenty years of observation of and experience with the product of our high schools, that young men and women of college age are nothing like so well educated today as they were fifteen years ago, in spite of all our complicated, humming machinery. May I say, further, that I believe the vast majority of college professors will be found to be in absolute agreement with that statement.

Before passing to illustrations, let me say that, in my opinion, the most unfortunate and destructive result of our contemporary passion for machinery is the all but complete suppression of personality behind the teacher's desk. Now everybody knows that many of our teachers are young and inexperienced, and, therefore, in need of expert and sympathetic guidance. But this fact appears to me to furnish no excuse whatever for the condition of abject slavery to the machine in which all our teachers, young and old, find themselves. I have talked with many of them; they say to me: "I should like to teach arithmetic in such-and-such a way; I want to do thus-and-so in my classroom; I feel that this child should be given a certain regimen, but I don't dare: I'd lose my job!" When you take out of education the personal touch of instructor and student, when you subordinate the influence of personality to the roar of machinery, when you make it possible for a little tin god in a swivel chair to dictate the minutest details of classroom procedure to a hard-pressed teacher five hundred miles away, you have taken out of education its life and soul.

Mark Hopkins sat on one end of a log
And a farm boy sat on the other.
Mark Hopkins came as a pedagogue
And taught as an elder brother.
I don't care what Mark Hopkins taught,
If his Latin was small and his Greek was naught.
For the farmer boy he thought, thought he,
All through lecture time and quiz,
"The kind of a man I mean to be
Is the kind of a man Mark Hopkins is!"

Theology, languages, medicine, law,
Are peacock feathers to deck a daw,
If the boys who come from your splendid schools
Are well-trained sharpers or flippant fools.
You may boast of your age and your ivied walls
Your great endowments, your marble halls
And all your modern features—
Your vast curriculum's scope and reach
The multifarious things you teach—
But how about your teachers?

Are they men who will stand in a father's place,
Who are paid, best paid, by the ardent face
When boyhood gives, as boyhood can,
Its love and faith to a fine true man?

No printed word nor spoken plea
Can teach young hearts what men should be,
Not all the books on all the shelves,
But what the teachers are themselves.
For Education is making men!
So is it now, so was it when
Mark Hopkins sat on one end of a log
And James Garfield sat on the other.[2]

Illustrations of the fondness for machinery of those who sit in the seats of the pedagogical mighty are numerous. One is the loud insistence upon the value of courses in methods of teaching. Now, my own opinion—somewhat out of date, I suppose—is that no man or woman who has to learn methods out of a textbook has any business in a schoolroom. But here is an aspirant for the position, let us say, of French teacher in your high school. The principal question asked concerning her is not, "Does she really know French?" but, "How many courses has she had in methods of teaching French?" She may not be able to conjugate *parler* in the present indicative or to discuss intelligently the pronunciation of nasals, but if she can show a passing grade on a course in methods in some reputable normal school, the job is hers. The palpable absurdity of this sort of thing is beginning, happily, to be apprehended in some sections, but in many others methods are still regarded as of supreme importance.

Please do not misunderstand me. I believe, of course, that older and more experienced teachers can give invaluable assistance to beginners, and I believe beginners should have such assistance whenever possible; but honestly I would not swap thorough knowledge of subject-matter for all the textbooks on methods, plus all the methods courses, on earth. You will possibly tell me that prospective teachers

[2] Guiterman, Arthur. Reprinted by permission of Harper and Brothers from *The Laughing Guitar.*

need not make choice, as between content and method, but may select both types of courses. I reply that smooth-tongued pedagogical casuistry has produced so widespread a belief in the efficacy, not to say magical power, of machinery that the average teacher, making up her schedule at the summer school, is apt to decide complacently that she learned plenty of French back in the high school, and that, therefore, she will now learn how to teach it, since the grade of her certificate appears to depend chiefly on her credits in methods courses. Any college professor will tell you how terrible are the results.

In the field of administration the rattle and clang of machinery are deafening; and the amount of the taxpayers' money expended for secretaries, supervisors, experts of all sorts, snoopers, delegates, observers, and heaven knows what else, is appalling. I think no good citizen would object to paying for the upkeep of this expeditionary force of agile and vociferous supernumeraries if he could be sure his boy and girl were really being better educated as a result of their beneficent activities. But he has his doubts, and I believe that they are growing stronger and stronger, and that some day in the near future he will rise up in his might and smash into bits about two-thirds of the clashing, grinding wheels and cogs and belts and cams, in the sacred name of the future citizenship of this republic.

Perhaps the most striking example of mechanics in modern education is the recently developed conviction of the supernal wisdom and divine finality of those potent fetishes, tests, and measurements. The sanctum of every well-regulated school nowadays has its walls all beplastered with charts and graphs, curves and lines, diagrams showing beyond cavil the whichness of the what, tables of percentages and a great variety of other such mural decoration; while in the filing cases may be found questionnaires, intelligence tests of every conceivable kind, so-called scientific measurements of everything and everybody on the place, measurable and immeasurable.

I am prepared to admit that tests and measurements are possibly a valuable adjunct to the correct grading and classification of children, *in school;* but many of our educational experts have arrived, by heaven knows what tortuous paths of ratiocination, at the conclusion that a fifteen-minute test furnishes unexceptionable indication of the work in life for which a boy is fitted, that the way a girl answers the inquiries in Professor Whatshisname's questionnaire determines her destiny. The lengths to which some educators go in their exploitation of this most recent piece of pedagogical machinery are positively unbelievable. No man who walks this planet has any right to assume such omniscience as to present himself, armed with a bunch of tests, in the rôle of dictator of the future life and

work of American children. And yet, "vocational guidance" begins, in many school systems, in the fifth grade. And the poor children who are being thus experimented on and tested and measured and pawed over are simply helpless victims of a transient and ephemeral fad, while their parents smile sweetly and humbly murmur, "Speak, Lord, for thy servant heareth," when the expert arises to explain dogmatically and sonorously that tests and measurements are absolutely the last word in really scientific education.

Not long ago a brilliant young psychologist said to me: "I'm giving a course this summer in tests and measurements: ten per cent of it is psychology, the rest is bunk."

If you think I have exaggerated the purple passion for machinery in contemporary educational theory and practice, read the catalogue of any one of our larger summer schools, and be convinced that we are rapidly exchanging personality for mechanical technique, inspiring contact between teacher and pupil for graphs and curves, and sympathetic oversight for tables of intelligence quotients and foolish questionnaires; in other words, that we are turning our school system into a vast machine shop, peopled by peering overseers, emotionless and wooden-faced automatons who pull levers at the word of command, and, of course, an unlimited supply of raw material for the gigantic, clashing looms.

The third factor in the current educational picture which I for one view with deep alarm is the growing insistence on so-called training for efficiency. As a matter of fact, the phrase, "training for efficiency," has come to be a sort of slogan, a species of war cry, which is shouted from a thousand platforms and emblazoned upon tons of pedagogical propaganda.

There are many reasons why I fear, and abhor, the point of view represented by this slogan. Permit me to present some of them.

In the first place, it usually does not mean what it says. For, in school systems operated upon the basis of that phrase, the boys and girls, instead of being trained for real efficiency, are inevitably inoculated with the poisonous notion that their chief aim in life must be to land a job, and that they must prepare for that job during their grammar and high-school and especially during their junior high-school years—and be quick about it. What a pitiful and tragic travesty of education! What a crime against the aspiring youth of this land of ours! What a fraud and a mockery!

Now, the making of a good living is a duty incumbent on all men, and it requires preparation; but I protest with all the force I can command that the schoolroom is not the place for that preparation.

The idea of vocational education came to us from Germany,

where it was originally designed to assist in the gradual development of a distinction between the working classes and the cultured classes. Introduced into this country and shrewdly press-agented, the new scheme at once caught the popular fancy, and we were blandly assured that at last the true type of education had been discovered. Henceforth, children should not burden their minds with so much mere baggage which would never be of any use to them, but should study practical subjects which would fit them for life! And are these subjects taught today in trade schools, where properly trained teachers and adequate equipment are available, and where all the time can be devoted to them? Yes, here and there. But as a rule, they have slipped one by one into the already crowded high-school curriculum. What is the result? Many boys and girls, lured by the everlasting yap of training for efficiency, register hopefully in the courses in architecture, journalism, automobile ignition and repair, stenography, and so on. And instead of being trained for efficiency, they are merely trained in inefficiency, for it is utterly impossible to teach any trade under heaven thoroughly in the time and with the equipment available in the average high school. In other words, vocational education in the high school does not do and cannot do what it so loudly pretends to do. What it actually succeeds in accomplishing is, first, by diverting the student and dividing his time, to put beyond his reach genuine progress in language, history, mathematics, literature, and science; and, second, to turn him out as a poor, halting bookkeeper whose presence would be tolerated about three minutes by a banker, or a limping automobile mechanic—soon out of a job, or a journalist whom a reputable newspaper man would kick accurately, enthusiastically, and immediately out of the sanctum.

A recent writer in the *Atlantic Monthly* expresses it thus:

> They learn perfection in none of their material projects. There is nothing from their little juvenile news-writing to their blacksmithing that they would not learn better in a brief apprenticeship under a working professional or a responsible artisan with the standards of his guild.

Permit me to cite, further, no less a pedagogical Moses than David Snedden, of Teachers College, who said, in an article in a recent issue of *School and Society:* "There is no future for true vocational education in any junior high schools or under the age of sixteen at the lowest. . . . Vocational education and general or liberal education corrupt and nullify each other when offered in the same school."

But the vocational courses are popular. Why shouldn't they be? They are much easier than Latin and geometry, and far more interesting than English history and physics. Courses in cross-word

puzzles, in hair bobbing and manicuring, in the construction of movie scenarios, in whistling, in fancy needlework, in aesthetic dancing, and a hundred others, are now masquerading ridiculously in the robes of education in our schools. I presume we shall presently be hearing about attractive vocational courses in the theory and practice of performing upon the ukelele and the saxophone, in applied mumblety-peg and in advanced stud poker.

Easy, interesting. There you are. Of course every normal child will choose such subjects, when he is allowed to do so by the elective system, which, as applied to growing boys and girls, has always seemed to me a pernicious piece of incredible stupidity. For, when they have acquired, in the plastic years, the notion that they can always select the easy and the interesting task, one of the foundation stones of character has crumbled into dust.

H. G. Wells, in "The World Set Free," an imaginative story of 1960 and the years immediately preceding and following, puts into the mouth of his most striking character this address to the teachers of that advanced period:

> Whosoever would save his soul shall lose it. . . . That is the starting point of all we have to do. It is a mistake to regard it as anything but a plain statement of fact. It is the basis for your work. You have to teach self-forgetfulness, and everything else that you have to teach is contributory and subordinate to that end. Education is the release of man from self. . . . Under your guidance and the suggestions you will bring to bear on them, they have to shed the old Adam of instinctive suspicions, hostilities, and passions, and to find themselves again in the great being of the universe. The little circles of their egotism have to be opened out until they become arcs in the sweep of the racial purpose.

I have never read anywhere a sterner denunciation of high-school vocationalism—of "training for efficiency." Teach the boy that only that study is worth while which puts bread in his own belly and money in his own pocket, and you have thrust upon the world a smug little package of concentrated selfishness which will probably make a living, marry a wife, beget sons and daughters, and finally leave the world not one whit better than he found it.

The results of this sinful waste of time and shameless pandering to the demands of an unenlightened but imperious public clamor are already so plain that he who runs may read them. Freshmen come up to college knowing nothing thoroughly. Many of them cannot spell or punctuate, either cannot, or will not, speak their mother tongue correctly, and worst of all, cannot think in a straight line to save their poor little illiterate, mutilated souls. They have pinched here, nibbled there, tasted yonder; they have been encouraged to

follow the line of least resistance; they have been taught but two things permanently—the habit of superficiality and the artful dodging of difficulties. They are a pitiful congeries of tumble-down shacks, propped up at one corner with a few vocational bricks; at another, with a collection of blocks of sugar-coated educational pills; at the third, with a company of tin cans filled with widely heralded and quickly discarded pedagogical fads; while the fourth corner rests upon a vivid imagination and a predisposition to the gravy train. The situation would be comic if it were not so tragic: for we must not lose sight of the fact that these wretched Freshmen are the future leaders of our civilization.

Turn from the campus to the street, and the results of our up-to-date educational system are just as patent and just as disheartening. What, for example, do our people read? Two million copies monthly of *True Story*, a sickening concoction of piffle and hokum, prepared for fifth-grade intelligence; 650,000 copies monthly of *True Romances;* hundreds of thousands of copies monthly of such unspeakable and incredible trash as *Dream World, Fiction Lovers, Snappy Stories, Whiz Bang*, and so on. One good look at a modern news stand is enough to superinduce a hopeless case of delirium tremens. Even many of the daily newspapers have added to their thrilling accounts of corn shuckings and hog killings a daily page of concentrated quintessence of slush in the form of continued stories to satisfy the public craving for literature. And as for books, Harold Bell Wright and Elinor Glyn remain our most revered authors.

To cite another example, the public taste in the matter of music may be mentioned. "Gimme jazz; play me some jazz." Everywhere, all the time; even in the church and Sunday school we must sing jigs and one-steps and waltzes turned out by the bale with loud protestations of piety from publishing houses which are busily and remuneratively capitalizing the popular fondness for trash, and which are not at all concerned at the consequent desecration of the house of God.

One more illustration: At the present time our glorious Union is the proverbial happy hunting ground of the propagandist. Anybody can get a following, if he yells loud enough and long enough, and has the sense to depart to other pastures soon enough. Why? Because hundreds of thousands of our citizens either cannot or will not do their own thinking, but get their political, philosophical, artistic, and spiritual supplies from Sears-Roebuck or any other such source which spouts conveniently.

You ask what all this has to do with education. Take a boy, normal, healthy, aspiring; send him to school; let him slide and

dodge his way through by the convenient election of easy vocational courses, avoiding the sound, stern disciplines, thus coming eventually to despise culture as something for Bostonians and dry and dusty college professors, learning a very little about many things and learning chiefly how not to do what he does not choose to do, and the result can be predicted with an assurance surpassing the test fanatic's fondest dream.

I have given my life and such poor ability as I possess to education as I conceive it, and I propose to continue so to do as long as the good God lets me live. And I never leave my classroom at the end of the day's work without a strengthened conviction that education means the building of manhood; the formation of character; the development of a passion for service and for leadership; the constant widening of sympathy and understanding and toleration; the planting and nurturing of the seeds of love for all the beautiful and inspiring and noble achievements of humanity; the steady growth of the soul into truer and closer fellowship with the Divine Soul—the Supreme Educator—the Master of us all.

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Individualism in Mathematics

By RALPH G. WILBUR[1]

DURING THE EARLY PART OF THE LAST CENTURY scholastic subject-matter was looked upon as the consideration of major importance for a course in mathematics. Many changes have been instituted until today the emphasis is—especially in the secondary schools—on the science and art of classroom instruction. The change, without doubt, has been the result of the recognition of individual differences in ability among pupils.

The large metropolitan high schools have provided in their curriculum ten or more courses from which a pupil may receive a diploma. Within these courses there are about ten different groups, classified according to the selection of subjects. Of these groups about 65 per cent include freshman algebra, either as a required subject or as an elective. This same principle involved in the classification just given has carried over into the teaching of mathematics itself. The pupils, revealing as they do wide differences in abilities, needs, capacities, ambitions, and future usages, have made the problem of instruction become an individual one. The democratic ideal in education, as everywhere else in life, is not equal distribution to all but equal opportunity to acquire for individual needs. The genius and the moron do not have quantitatively the same rights to knowledge; they have equal rights in proportion to their capacities, quantitative and qualitative, and each should be as insistent upon his rights as the other.

To meet this need many schemes have been evolved, among them being the Winnetka plan, the Dalton plan, the individual-progress plan, and that of homogeneous grouping, which is quite prevalent throughout our country. This last plan, we believe, more nearly succeeds in permitting the superior, the average, and the slow to work each to his own capacity, and it is more easily adapted to widely diverse conditions.

An interesting study of the tendency in methods of teaching and modes of adjustment in twenty-five Ohio schools is summarized in an article in the *Ohio Teacher*. The most common teaching

[1] Principal, East Night High School, Cincinnati.

methods were directed study, recitation, and demonstration by the teacher. Grouping of students for individual progress is prevalent. The bases for sectioning or grouping pupils were combinations of intelligence tests, achievement tests, and teacher-judgment. Deviations in subject-matter for dull, average, and superior pupils, although quite general, are still not as much used as is desirable. These deviations, however, seem to be more prevalent in classes in algebra and in schools where the work is organized about topics or units. Sixty-three classes out of the eighty-two reporting were sectioned and used some scheme of individual instruction. For all the schools the average time used regularly for directed study was nineteen minutes.

A study was made comparing the homogeneous-grouping plan over a period of three years with the non-homogeneous plan of the year following; both investigations were carried on under the supervision of the writer. Like conclusions from a similar experiment were aptly expressed before the Illinois State High School Conference as follows:

1. It enabled the bright pupils to forge ahead and complete the subject-matter outlined in a course enriched with much supplementary material.
2. It served as a spur to lazy pupils who wished to avoid being dropped back to slow sections.
3. It reduced the number of failures.
4. It made possible the giving to slow pupils as much explanation as they needed for real understanding without boring bright pupils.
5. It made slow pupils feel more free to ask questions and volunteer information.
6. It helped in developing habits of industry in slow pupils.
7. It made for greater honesty.
8. It developed a happier frame of mind in slow pupils since they found work which they were capable of doing.

What Mathematics Shall We Teach?

By MARIE GUGLE[2]

IT CAN READILY BE SHOWN THAT, to meet approved objectives, mathematics of some kind rightly has a place in the curriculum for all children. Nevertheless, it seems evident that, because we are trying to teach too much mathematics to many pupils, far more than they can learn to use or appreciate, we are not teaching enough

[2] Assistant Superintendent of Schools, Columbus.

mathematics to others. It is evident, also, that, because the mechanical operations are too much isolated in our teaching, too unconnected with real and interesting situations, we are not achieving satisfactory results. It is a shock to learn through the experiments of Schorling and others that some twelfth-grade pupils cannot add correctly such a column as 7, 9, 8, 5, 6, 8, 4; that only 14 per cent can tell what per cent of 12 equals 30; that only 69 per cent can arrange in order of size three such decimals as .666, 1.15, and .35.

Perhaps one reason for such deficiency is that we begin teaching in the first grade not only the symbols of the English language but also those of arithmetical language. To teach the first to six-year-olds is a gigantic achievement. It can be done because the child has had five years of experience in hearing and using the English words and sentences before he tries to learn the printed symbol. Since it is unpedagogical to ask any person to begin two languages at the same time, formal arithmetic should be deferred until the third grade. Meantime, in grades one and two, while the child is learning to read English, he should be getting the necessary number experiences which will give meaning to his later study of arithmetic. This informal number experience should be quite incidental for the child, but definitely planned by the teacher. For illustration, see the Columbus course of study in primary arithmetic.

The essentials of elementary arithmetic for grades four to six are more limited in content than in any other subject. Most schools spend an undue amount of time in teaching this work indifferently. Public schools have many pupils with intelligence quotients of 70 or below. Some of these never develop reading ability above the third-grade level. Yet we try to teach them upper-grade arithmetic, a process wasteful of time and money.

For normal pupils, we should distinguish between the manipulative or calculation side and the application or appreciation side. The former is absolutely worthless unless it is correct. Yet we approve a passing mark of 70 in arithmetic. If teachers would wait until the third grade to begin formal arithmetic and then, from the first, accept no calculation except that which is absolutely correct, I believe we could achieve a real mastery of the fundamentals in the elementary grades. Success in this task depends more upon the attitudes than upon ability or skill alone. The endless drill we exact in arithmetic and algebra defeats our purpose in developing mastery because the pupil has no vital incentive and sees little connection with some interesting reality.

Many people look upon arithmetic as a tool subject, although Judd maintains that it is more than a tool, it is a mode of thought.

But, even as a tool, it must be an instrument used by someone to help him make or do something else worth while. It is foolish to study or learn about a hammer, a chisel, or a saw, or about any other tool apart from the purpose for which it is used. The study of a tool is never an end in itself; yet we have been teaching calculation in arithmetic and manipulation in algebra as an end in itself.

If mathematics is a tool, it is a tool for thinking. If we make somewhat more prominent the concrete or life situations in which we need to use mathematics, the pupil will be satisfied with nothing less than accuracy, just as he feels compelled in the shop to make exactly square corners on a box or cabinet. I would rather have a child think through one problem in which he gets his own measures or data, sees some real use for his multiplication or other process, and checks his own work than to have him do without thought ten problems as drill exercises.

The other phase of mathematics is a growing ability in thinking, in generalization, in appreciation. In this, satisfactory progress means a constant, even though slow, growth. Direct teaching plays little part in this learning. The teacher's part is rather that of sympathetic inspiration toward self-direction and creative thinking. Appreciations grow from within. They cannot be forced from without.

All pupils whose mentality permits them to attain ninth-grade ability in reading can, I believe, develop a real mastery of the fundamentals of arithmetic, and, in Grades VII to IX, profit from a comprehensive course in general mathematics. Such a course should include the arithmetic of business, simple accounts, intuitive geometry such as vitalized mensuration, and should serve as a vehicle for the introduction of general number, the modern content of a course in first-year algebra, numerical trigonometry, and at least a little demonstrative geometry.

Until the future of such a normal child is known, it is unwise to restrict his later development by laying any smaller foundation than this broad junior high-school course. Unless pupils have ninth-grade reading ability, it is squandering public funds to force them to take regular junior high-school work in many subjects such as Latin, mathematics, or science. For pupils of lower reading ability, either special schools or special ungraded classes in junior high schools should be established.

The junior high school may well end the training in mathematics for many pupils. Some may profit from the training in logical thinking derived from a year's course in demonstrative geometry, both plane and solid. But, as a general college-entrance requirement, the year of plane geometry is insufficient and misleading. It

does not prepare for college work in mathematics. For those majoring in the sciences or engineering, the requirements should be, besides the year of plane and solid geometry combined, two years of fused mathematics in Grades XI and XII, covering advanced algebra, trigonometry, and the elements of analytics and calculus.

Thus, by eliminating from high-school classes in mathematics those who do not want or need mathematics, more adequate training could be given to those who do, and the gap between tenth-grade geometry and college algebra might be bridged. We must diagnose pupils' individual abilities and needs more accurately, and guide them in the selection of studies more definitely and more wisely, if we would make the teaching of mathematics more effective.

The Compatibility of Mind and Mathematics

By JOHN P. EVERETT[3]

In this year of 1931 teachers of mathematics and all other teachers have the benefit of a knowledge of subjects, pupils, and society whose most remarkable quality is the accelerated speed with which this knowledge has been accumulated. The present generation of teachers differs from any that has preceded in the range and extent to which, under their own eyes, there have been applied to educational processes the refinements and the precision of scientific methods of investigation. With the flight of years you and I have been amazed at the extent to which we have found ourselves capable of being improved beyond the perfection of the technological equipment with which our own college commencements sent us to our respective niches. We are not peculiar in having had that experience, however. Our experience has its distinctive quality in the measure of the extent to which twenty years, or even ten years, have added to our available sources of information.

Often some critic arises to condemn us because of our love of speed. It would be better to congratulate us upon having such temperaments or such dispositions or such adaptability that we are able to find attractiveness or comfort in swift motion, because, whether upon the highway or at the desk of the scholar, he who is rendered unhappy by high velocities is due to encounter more grief than he probably knows what to do with. Out of the whirl of investigation and accomplishment there have emerged some elements of definiteness which are both satisfying and stimulating. These

[3] President, National Council of Teachers of Mathematics.

elements pertain especially to the field of methodology, of how to teach. Whether it be in the subject of addition of integers, the use of formulas, or the solution of original exercises in geometry, learning, and therefore teaching, procedures are carried on with many features of measurable outcome and much certainty of the efficacy of alternative avenues of approach which were formerly lacking. The science and art of instruction as a definite, teachable topic is not yet considered quite respectable in all circles of the educationally élite, but it is becoming so. If there is any doubt about this, one may refer to the North Central Association of Colleges and Secondary Schools, which has initiated during the past two years a study of the status of college teachers with especial reference to their attainments, not in subject-matter, but in the techniques of teaching. This has occurred not merely with the consent of colleges, but by the active participation of the colleges themselves. And this in the same North Central Association that bid fair to be entirely disrupted a dozen years ago by the mere suggestion that college teachers might profit from professional courses in the science and art of teaching.

The observer of educational trends sees normal schools, which now have generally become teachers' colleges, avidly desiring, and attempting, to attain to that which has heretofore constituted the palladium of the college, namely, academic respectability with respect to subject-matter. This movement is already in full swing although it represents such a reversal of past form that it appears too revolutionary to some normal-school executives and faculties. Some teachers' colleges have already arrived in this respect, and the standards of the American Association of Teachers Colleges are such as to welcome scholars to these institutions and to insure an atmosphere in which scholarly attainments are respected and encouraged.

The movement of colleges toward professional improvement of their faculties in methods of instruction is not yet far advanced, but it is surprising to note the momentum which this trend is acquiring. It seems fairly obvious that sufficient progress has been made in arriving at an answer to the implied question, "How should this be taught?" to attract the more or less favorable attention of all grades of teachers, including university professors.

While it might appear as though there were still much room for the development and improvement of methods of instruction, the professional educator is already off on a new scent. The actual performance of teaching is, right now, a topic of inquiry quite subordinate to some other questions of which the foremost are: What to teach? When to teach? and Whom to teach? These questions, it may be observed, belong to the periphery of teaching. Important

as they most certainly are, none of them is central, necessary, or inevitably imminent to the extent that characterizes the question, How to teach? If there is any doubt of the extent to which this last question has been subordinated, let one but refer to the type of activity which has mainly engaged the teachers of large and medium-sized school systems for the past seven years. There has been in evidence both in degree and extent a professional participation of teachers in the affairs of school management never before seen in the schools of any country or of any time, and the chief emphasis of attention and effort has been upon curriculum revision. It appears that in this movement subject-matter specialists, teachers of mathematics among them, have not always played an important part. Mr. Bagley has remarked that some of the most important commissions having to do with revisory functions which have printed such reports as *Research in Constructing the Elementary-School Curriculum* by the National Education Association and the *Twenty-Sixth Yearbook of the National Society for the Study of Education* have been made up almost entirely of general educators.[4] These commissions have necessarily greatly influenced the attitudes of administrative officials of school systems and have both directly and indirectly had much to do with fixing the direction which efforts at curricular improvement have taken. As a natural result of the predominance of general, as contrasted with specialized, educational expertness and authority, those phases of mathematical education have been emphasized to which the investigator has been able most easily and readily to apply himself, sometimes with an apparently limited knowledge of the subject itself and not always a fine regard for either the history of former educational movements or of the philosophy and purpose of present-day educational support. Let any great movement, cause, or institution obtain a preponderant vogue, there immediately arises a double menace: the formulation of machinery whose very perfection of mechanization may cause people to lose sight of the real purpose for which it was created; and, on the other hand, a danger lest people's credulity may be imposed upon through the intensity of their interest. Place these two possibilities along with the quite universal disposition of the human acquisitive instinct to rise to the bait of something for nothing, and you have a perfect setting for pedagogical pyrotechnics.

Mathematics undoubtedly gets its full share of attention from the educational generalist, and, while the subject can meet all comers from every angle, I am inclined to think that its rehabilitation where

[4] Bagley, W. C. "Professors of Education and Their Academic Colleagues," *Mathematics Teacher*, XXIII (May, 1930), pp. 277–88.

that is necessary and its place in the general scheme of things would both be better served were mathematicians themselves to take a more active part in the revision of mathematical methods and the distribution of curricular offerings.

In mathematics so violent and virulent has waxed the discussion of what to teach that a more characteristic statement of the problem would almost appear what not to teach. Witness the space given, especially in some treatises on the teaching of elementary mathematics and in periodical literature, to the lists of topics to be deleted. Or witness such books as Wilson's *What Arithmetic Shall We Teach*, or Bowdon's *Consumers Uses of Arithmetic*. Neither of these authors devotes much space to the extension of the uses of arithmetic, to its informational significance, or to its cultural implications. They rest their case upon the evidences of practical applications which they are able to wrest from people trained neither in the processes of scientific introspection nor necessarily interested in the extension of intellectual horizons.

To measure the extent to which any human interest should be cultivated in schools by the yardstick of present attainments or uses, even though an exact measure of their extent could be secured, would be to stifle at its source one of the chief instruments which has been institutionalized for the cause and benefit of human progress. An application of mathematics, or of any other subject, which has lost its articulation with present-day interest should be scrapped just like any other useless machinery, but that is accomplished easily in any case. On the other hand, it may be defensible and highly beneficial to keep alive in schools for centuries a principle or a general idea which has no practical application whatever. Numerical procedures and thought processes have been immeasurably accelerated and stimulated by the introduction of decimal fractions, but of what use initially were decimal fractions to a world geared to the modes and measures of common fractions? Who would venture to say that the near-divine perfection of relationship between hypothesis and conclusion in Euclidean geometry has not been one of the most stabilizing influences toward the development of moral consciousness long before there could have been extracted from the subject any considerable body of active applications? Why ever the algebraic formula, now a well-nigh universal instrument for economy of expression and thought, long before the idea of the formula had taken form in the daily thought of men there were the rules of unitary analysis and the rule of three to fulfill every requirement of the demands of the times.

What to teach is an important question which should be answered

by the determined efforts of active and courageous minds. The answer should comprehend the child, the individual, and society as units whose interests are inseparable and whose development can in no wise be fostered by a program which is so predominantly centered upon any one of them as to preclude the full and complete demands of the others. The attempt to adjust educational schedules to the affairs of life is highly desirable and useful and not to be minimized nor deprecated in any manner, but the educator who attempts to predicate his course of study for any normal individual at any time of life upon the needs of the individual at the time must turn his back, and does turn his back, upon many of the responsibilities as well as the opportunities with which we are endowed by the fact that we have a social heritage.

The emphasis of elementary education today is upon living, and great is the improvement which such an idea has wrought in the principles and external attributes of teaching; but this idea of life being real to the child in no wise changes the fact that this same child must live and make his way in a world wherein he reacts not merely to the phenomena of his own time and his own nature, but wherein he must learn to react to the conventions of a society whose operation is complicated literally by infinite contributions of people and customs and traditions, with which no child can ever expect to become acquainted in their entirety, and in which no child can expect to participate adequately except as he enjoys and profits from the orderly presentation and sympathetic interpretation of a way of living toward which his nature may yearn, but at which unaided he certainly would never arrive.

Modern education is complicated by the many-sided nature of the child himself. It is still further complicated by the variety of interests for which a school must have regard if it is to preserve a balance which shall make it more of a help than a hindrance to those whom it attempts to serve. Thus a "child-centered school," in the sense of a school dominated by interests and needs and tendencies which might be derived from a study of the nature of children alone, would be a still greater curse than a system deriving its content and methods from the adult viewpoint alone.

The chief problem of educators today is not to save children from the machinations of exploiters of poor intentions. The occasions upon which there arises a man or woman who seems to be a pure opportunist are so few in proportion to the number of openings that the idealism of school people generally shines with a steadiness and luminosity that justify all the cost and sacrifice which are being put into schools and the means of education. Neither is the chief problem

of educators to save children from the stultification of a tradition-bound school system. A prominent educator stands before the National Educational Association and tells his audience that educational processes must be made over completely, that present procedures cannot be made to serve by any process of "tinkering up" the present machinery, because elementary education has been dominated by higher educational institutions. Another prominent educator stands before the North Central Association and tells his audience that secondary education is a failure, because it has developed with no conscious regard for the philosophy of its function and with small regard for a measure of values of its output. These men perform a service in calling attention to something wrong in our aims and processes, though I am not sure that their prescriptions are as valid as their diagnoses. My automobile is expensive to maintain, dangerous to my neighbors, and hard on the roads. All that I know, and still I continue to run the contrivance. If it stalls at the stop light and sputters on the hills, that trivial circumstance sends me to the service station forthwith. If the service man says that he can remedy the trouble by cleaning out the gasoline line or tightening a bolt in the differential or adjusting the distributor, that sounds all right and I probably tell him to go ahead. But if he tells me I should take off the rear wheels and leave them off because they cause chatter bumps in the road and that I should throw away the fan because it does not blow cows out of the road, and that it is foolish to carry collision insurance because 85 per cent of the accidents are caused by 20 per cent of the drivers, I should probably conclude that I was consulting an educator instead of a mechanic, and drive on to another garage.

The automobile and education are alike in being far from perfect institutions. I believe that they are also alike in that they will both be improved by methods which are calculated to modify, rather than revolutionize, the *status quo*. Mathematics has a position and a nature which place the subject squarely in the path of critical consideration. Mathematics is strongly intrenched as a part of our educational system. This fact alone is sufficient to make the subject a fair target for those who seek to evaluate and improve educational techniques. The universality of mathematical principles and applications gives to mathematics a peculiar place among the possessions of men. Mathematicians cannot expect to carry the subject off into a corner and do with it as they please. Neither can they expect that mathematics is going to be understood, appreciated, or encouraged by general educators, or others, who are not educated in mathematics, which brings us to the second peculiarity of mathematics;

namely, that in its bearing upon the human soul mathematics is a science which belongs wholly to the realm of contemplation as contrasted with sensory experiences. In chemistry, for instance, the elementary notions of the subject are creations that follow from observation of qualities or things that already exist, and any of its facts may be challenged on the basis of observation alone. The theory of the molecular composition of water may be overthrown at any time by a closer look at that which comprises water. Not so the most simple ideas of mathematics. Whether or not the square on the side of a right-angled triangle is equal to the sum of the squares of the other two sides depends upon a point of view, and a point of view is unassailable. The important thing to note is that from the same point of view all right triangles to all contemplators offer precisely the same identical opportunities for drawing conclusions and also force identical conclusions. Mathematics sets out to accomplish just one aim, to establish a perfect relation between its hypotheses and its conclusions, and it makes sure of its hypotheses by assuming every one of them. By this unique device mathematics has furnished the world a method, which it has not been slow to grasp, for simplifying its problems and refining its thought processes. The fact that four times seven is twenty-eight stands out as an item of information whose prevalence and frequency may be more or less measured in terms of 13 per cent of the urban population using the fact an average of 3.74 times a year up to the time when their expectancy of life is 19.5 and thereafter diminishing at a constant rate of .093. Such data prove useful too often to discourage gathering them; but the conclusions drawn from them too often seem fantastic to encourage their present use as guideposts along the paths of pedagogy.

As Mr. Judd has pointed out, the pupil emerges from a mathematical experience a different being: equipped with some additional knowledge, to be sure, but of still more significance, the pupil gains from his mathematical participation a sense of the permanence and reliability of thought processes which no other department of knowledge and accomplishment has been quite so successful in imparting.[5]

Facts and the knowledge of facts constitute the framework of most that distinguishes the life and thought of you and me from that of the head hunters of Nigeria. But facts alone do not suffice. We, with our scientific techniques and accuracies, have more facts now than we are able to assimilate. We lack thought methods more than we lack thought materials.

[5] Judd, C. H. "Informational Mathematics versus Computational Mathematics," *Mathematics Teacher*, XXII (April, 1929), pp. 187–97.

Just before we entered the Great War I was greatly entertained by two programs that were conducted within a distance of a few blocks and within a time of a few weeks. At one a street-corner agitator was assuring his audience that the only reason why bread was not retailing at a price of one cent a pound loaf was due to the indifference of the government toward its responsibilities for the welfare of the workingman. At the other program a group of agriculturalists was demonstrating that the actual cost of production of a bushel of wheat was $2.97, and that the only reason why wheat was actually selling at about $2.00 at the time was due to the indifference of the government toward its responsibilities for the welfare of the farmer. Both had some facts, both had a problem, and both, I judged, were unhappy. They might still have been unhappy even though to their respective problems there had been applied methods of straight thinking; but applying a process of intelligent analysis to their problems would have removed a barrier of distrust which now, as then, has constituted a fruitful source of misunderstanding and which has stood as a constant incentive toward internecine strife. At the same time there would have been strengthened a sense of the mutuality of interests upon which democratic institutions must depend for stability and permanence.

Senators of the United States, communists of world-wide equality, and officials of the International Harvesting Machine Company will seek in vain the panacea of human ills until they not only face facts, but are also able and willing to relate these facts and follow them to their conclusion. In forcing conclusions, in insisting upon a logical correlation and sequence of ideas, mathematics is the most relentless instrument ever devised by the human mind. Some people do not like mathematics. They believe that mastery of the learning of mathematics is too difficult to compensate for the returns. To a considerable extent these people have a case against mathematics for which teachers of the subject must be held responsible. The machinery of the subject, its formulas, graphs, figures, and demonstration forms stand out, obvious as to their existence, if not to comprehension; moreover, they exhibit a perfection of word and phrase and symbolism which challenge admiration, but none of these things constitute more than the visible framework to which the soul of mathematics is attached. Many a pupil has completed a course in so-called "mathematics" with never a glimpse of the real meaning of the study. In algebra he solves his problems by applying the suitable formula or pattern; in geometry he learns a set of required statements; and in arithmetic he gains the ability to respond automatically to number stimuli. This involves some element of uncer-

tainty and practice in the recognition of likenesses and differences. Such teaching rises to about the dignity and importance of matching pennies, and it is not mathematics.

Any instruction in mathematics which relieves the learner of the necessity for thinking is justifiable only when it represents an item whose mechanical or manipulative prevalence is sufficient seriously to hamper thinking on the part of one who does not possess the particular ability. The primary facts of addition, subtraction, and multiplication justifies such treatment as to render their responses automatic. By contrast, the equation in algebra, while offering abundant opportunity for the application of automatized or manipulative methods, is deprived of most of its usefulness by such processes of instruction. The value of the instrument known as the equation resides in the economy and certainty with which a number of elements which contribute to the answer to a certain question are put into proper relationship with one another and to the whole question. At the same time the equation is a device which is so admirably adapted to a solution that finding an answer is often looked upon as the chief industry which equations are designed to promote. Were this the *summum bonum* of the mission of the equation, solution by transposition would be without a near rival; this is probably the quickest, surest, and most easily learned method of solving an equation that has ever been devised, but it has the fatal defect of ignoring completely all the properties of the equation that commend it to a favored position in the language of educated men. To a view of the equation as the symbolic counterpart of the beam balance there attach some habiliments of respectability not accorded to the transposition method, but both alike belong to the realm of the *ignis fatuus*—they exist, harmless, even artistically beautiful to the initiated, but often a lure of doom to those who depend upon them for their intellectual salvation.

After a brisk course in the mechanical solution of equations, the pupil comes to verbal problems with a result which the statistician is likely to record under the euphonious designation of "low correlation." The psychologist may take up the trail at this point and find in the instance another illustration of the instability of "transfer," and, except for the fact that he has left out of account the question of whether or not transfer requires anything to transfer, he is right. I can see no reason why practice in solving equations should have much bearing on the ability to set up and solve verbal problems, but I can see reason for expecting a close relationship between the two types of situations if the solution of equations is made to depend upon, and to be subordinate to, the type of relationship that the equation

is designed to express. Take, for instance, such a simple equation of condition as $x+2=9$, which presumably asks one to determine what value x must assume in order to make the equation possible. The answer to the question depends not upon the numbers which appear, but upon their relations: thus $x-2=9$, $x-9=2$, $x+9=2$, and $x=9+2$ contain precisely the same numbers as does the first equation, but all of them lead to different conclusions. The essential relations of the numbers requires one to observe that the second number, whatever it is, must be 2 more than x. It follows, then, that the value of x must be 2 less than the second number, which amounts in this case to 7. This may seem like a roundabout method by which to introduce the equation to a beginner, and it is roundabout from the standpoint of the result-getter; its claim to consideration is that it follows the lines of behavior of the mind, and the equation in its arrangement is ever, and only, a mental instrument. It is easily possible to devise machines that outstrip the human mind. I have a modern electric calculating machine in my office that has me beaten in many respects. Whether in getting a sum of a few numbers or in figuring a correlation coefficient from extensive data, that machine surpasses me by a margin that places it and me in totally different classes on the scale of certain capacities. However, I am not afraid of the machine, and I think that it will never corrupt me, because I know, in spite of its inhuman aptitudes, that it possesses some limitations that promise to keep it for some time from backing me out of the office. But suppose that some day an agent places on my desk a machine, made like the present one of rubber and glass and steel, with a talking attachment that shouts at me every time I express an opinion or even when I press a button; then if I allow that inanimate thing to bluff me into concluding that since it can do so much it probably can think also, I shall probably in the long run be making a mistake, though at first my prestige as an educator is likely to be enhanced to no small extent.

Anyway, something of that kind seems to have happened to some of our mathematical teaching. In establishing and maintaining a barrier between the child and what mathematics has to contribute to the soundness of his character and to his education, admiration for the marvels of algoristic representation vie with sentimental hesitancy to recognize that child nature has something more than itself with which to reckon in the process of growing up. Probably the subject never can be made easy to the extent of developing merely from incidental or project exposure, methods which operate, for example, in ordinary oral language. The conceptions and expressions of mathematics are more consistently and more insistently idealistic

than are those of the spoken tongue. It is a characteristic of mathematics to hold up an ideal, rather than a real, situation. Whether in counting beads or determining the area under a curve there is always an implication of something not there. With the beads there is either lack of uniformity, or else there is a quality of being a certain something under which each head may classify but to which no head may precisely conform without excluding all others which differ from it in any manner. With the area under the curve there is an implication both of precise measurement and of precise expression which transcend reality, but which approach perfection through arriving at consistency with some other condition, such as the use to which the idea is to be put, or the relations which it bears.

Ideals are hard to attain; their pursuit has been endless, but not tireless; many individuals grow weary of striving for that which they seem unable to attain. If the goal is obscure, all the more reason, they say, why effort should be relaxed, but the race of men as a whole never wearies in its attempt to interpret what it understands or to investigate what it does not understand. Mathematics is an invention which serves both of these purposes and which, therefore, seems to belong within the range of the privileges of every child.

In conclusion, a feature of mathematics which should stand out in the mind of the teacher is that methods of presentation are more than efficient devices, they are inseparable from the substance of the study. The subject of mathematics inherently has evolved with respect for the niceties of logical arrangement. To this foundation of naturally inherent perfectness there have been added the refinements that years have been able to accumulate and to accomplish. There also stand out, here and there, particular applications of mathematics which have been appropriated by the arts and crafts of commercial production, and by other subjects for the convenience of life generally in so far as orderly adjustments contribute to the convenience and satisfaction of social institutions. All of these things are considerably formalized and contemplation of them tends toward formality in the acquisition of facts and algoristic proficiency. The places where the substance of mathematics is recorded and where the common usages of mathematics are applied furnish evidences only of where mathematics has been or where it now exists, but mathematics itself is to be found not in conclusions, not in hypotheses, nor in both together, except as conclusions are reached through the intervention of a necessity which is entirely mental. Mathematics, then, is preeminently a subject in which there is not even a beginning of learning without an intellectual transformation which renders the learner conscious of and capable in an act of purely mental activity.

Reading in a Foreign Language

By MICHAEL WEST[1]

THE ROOT PROBLEM ON WHICH we have been engaged at Dacca is essentially the same as that which is being discussed at present in America, the problem of providing for the child who studies a modern language for only a comparatively short time some attainment which may be permanent and worth while.

The answer which we have given to this problem is the same as that given by the Coleman Report, namely, that reading should be given priority over speech. There are five main reasons for this priority of reading: First, it is possible within the short time at our disposal to teach the child to read. Also, reading is a form of study which the pupil can carry on unaided after he leaves school. Furthermore, reading can be made an enjoyable study, and one, therefore, which the pupil will be reasonably likely to carry on after he leaves school. In the reading approach, also, the minimum number of difficulties is presented to the pupil at the outset of his study. Finally, for the pupil who will remain on at school and proceed to the study of the use of the language in speech, reading is the best preparation. It provides that passive experience of the language which is the best safeguard against error and bad idiom.

Notice that the term "priority" is a vague one: the degree of priority varies according to the quality and social status of the school. Where a large elimination is to be expected, greater priority will be maintained than where the opposite is the case. In general, reading precedes speech by one book (about 300 new words). This priority of reading may perhaps be fairly generally admitted as an aim or as an ideal. A great deal of the controversy which has arisen in regard to it has centered round the question of practicability and method.

It is the belief of the writer that this question of method essentially reduces itself to the problem of constructing suitable reading material, so that the child may learn to read by reading. A child learns to read, not through the teacher, but by what he does himself.

Pending the production of such reading material, and it will necessarily take time, it may be possible to do something with easy unpre-

[1] Teachers College, Dacca, India.

pared material in languages which are rich in cognates. This appears to be more practicable in the college than in the school stage, since the college student has a large English vocabulary which enables him to interpret the cognates, and he has more of that deductive power required for intelligent inference of the meanings of unknown words. It is difficult to express an opinion as to whether such methods are practicable or desirable at a lower stage: there is danger of forming a habit of "sloppy" reading.

It is our purpose to consider here what type of specially constructed reading material will ultimately be required. We will describe that with which we have been experimenting. The child must learn to read by reading, and it must be a pleasurable process. Let us suppose that the child is nine years old. He will wish to read fairy tales or simple adventure stories, such as he reads in his mother tongue. In his mother tongue he has a vocabulary of some three thousand to four thousand words. In the foreign language, after one year's study he will possess some four hundred words, under our conditions of dealing with an unrelated language. This age discrepancy may be most speedily overcome by so selecting the words of vocabulary that they may be the most frequent, and most useful in the language, and thereby able to express far more advanced material than would be possible with an unselected vocabulary.

We commence by assuming that the child knows nothing. In the case of an American child studying French, we might assume a knowledge of a considerable number of simple cognates and adopted words, and this would make our task very much easier. New words and other new elements of language, including grammatical items, prefixes, and suffixes, are introduced at regular intervals. "One new in sixty running words" is taken as our general standard. In the initial stage, much of the material is necessarily of a disjointed character, as we are building up both vocabulary and the alphabet. In order to prevent "parroting," reading without thought of the meaning, it is necessary to illustrate this material copiously with pictures, and to provide numerous response-exercises in which the child cannot respond without realization of the meaning. Reading in the initial stage is largely oral. Later the children are made to mutter as they read. Silent reading is not encouraged until the child can read faster than he can speak.

Continuous matter, such as stories, is begun when the child knows 16 letters of the alphabet and 126 words. The second book consists of stories; the rest contain also articles, plays, and poetry.

The class reads straight through the book, finding answers to questions. There is no review or re-reading of a book once finished,

but the vocabulary of the book is reviewed in a set of exercises provided at the end of each book which introduce all the chief new words taught in the book. In the later books these exercises take such forms as acrostics or cross-word puzzles. In the earlier books they are mainly of the picture-question type.

After each ordinary reader carrying the vocabulary forward two supplementary readers are provided.[2] These contain no new words save the few that are unavoidably necessary to the plot. The purpose of these books is: to give the child pleasure and a sense of progress, to increase his ease of reading within the vocabulary known thus far, to strengthen his "direct bond," and to stretch the connotation of the words acquired thus far and render interpretation of them more elastic.

In order to facilitate home study and to ease the work of the teacher, each reading book is provided with a "companion" giving the meanings of new words in the order of their occurrence, their pronunciation when necessary, an alphabetical list of new words with references to their place of first occurrence, and questions on the stories. These questions are framed in the foreign language within the child's known vocabulary. They are also checked to insure that none may require more than a two- or three-word answer.

Such is the material used in the first part of the course, which aims primarily at creating easy fluent reading with a firmly established direct bond. When the child's vocabulary has reached about eleven hundred words, he is able to read a prepared version of an English novel such as *The Count of Monte Cristo* which does justice to the original. At the conclusion of the first part of the course (1,760 words) the child is reading easily and fluently, and with pleasure, prepared material of considerable difficulty.

It is now necessary to begin thinking of the second stage: he must be enabled to read unprepared material. This second stage has been termed the process of "weaning." In the first place, it is necessary to push forward the vocabulary. Since there is now no danger of breaking the direct bond by a slight increase of new-word density, the density is increased to one in fifty. The child will, in his unprepared reading, need to be able to interpret the explanation of a word given by a dictionary written in the foreign language. Hence, explanations of new words are now given in the foreign language instead of in the vernacular as heretofore.

It will be useful for the child to possess some knowledge of etymology so that he may in his unprepared reading be able to identify any known elements in an unfamiliar word; for example, a known

[2] "The New Method Series" (Longmans Green and Company).

prefix or known root. Hence, the reader contains an article on the subject of etymology, illustrated by roots, suffixes, and prefixes, already encountered in his vocabulary up to this point. In addition the etymology of all new words in this reader is discussed, if of value, and all nearly related words are brought in, such as words which may be formed with known prefixes from the newly acquired root.

We now reach the final stage. A certain number of words will always be encountered which are unknown to the pupil and to whose meaning etymology gives no clue. A large proportion of our own reading vocabulary in the mother tongue has been acquired merely by inference of such words in the course of reading.

It is necessary to give the child some training in the art of intelligent inferential reading. It is no use doing this with unprepared material containing some unknown words to whose meaning perhaps there is no clue. It is necessary, therefore, to prepare a book containing unknown words, but the context of each is so adjusted as to yield in every case some reasonable and adequate guidance as to the meaning of the unknown. The pupil will read, and write down his ideas as to the meanings of the unknown words in a section. He will then look them up in the companion and verify his conjectures. It will probably not be necessary to carry our work beyond this stage. Beyond this stage the child will probably be able to fend for himself in any reading material of normal difficulty, if he uses his etymology, his common sense, and a dictionary now and again.

Such is a brief résumé of the work on which we have been engaged. A statement of rates of progress would not be significant since our children start at the early age of eight and one-half and are learning an unrelated language. It is, however, reasonable to suppose that, given such reading materials in a related language, starting as he does at a very much more mature age, an American child should be able to reach, even within two years, such reading ability in a foreign language as is likely to prove a permanent and valuable asset, such reading ability as, by his unaided efforts, he may easily and pleasurably improve.

Some alterations of technique may be necessary in adapting this system to other languages whose structure is more grammatical than English. There is, however, no inherent difficulty in so doing. It is believed by the writer that the tendency of one who is not a native of the foreign language but has acquired it by a grammatical method is always to make more of grammar than is actually necessary. Grammar should, in our opinion, be treated entirely unsystematically in the reading; it should be introduced only as required to fulfill an immediate need. The systematic grammar may be taught separately.

It will necessarily be some time before the school-teacher will get just the right type of material needed for teaching reading in a foreign language; there is every reason to suppose that such books will eventually be produced. One difficulty may be foreseen in the cost of producing an adequate amount of material for the rapid rate of progress of the American student, in view of the high cost of book production in this country. This may perhaps be overcome if less elaborate books than are customary are used.

Radio Instruction in Languages

By R. E. MONROE[3]

As a factor in public instruction, the radio is rapidly assuming a rôle which is second to that of no other invention except the printing press. There is "music in the air," autumn, winter, spring, and summer. Grand opera and symphony orchestras are on tap in a million homes. The daily news reaches the outlying posts of civilization by way of the strange waves of the air even before the newspapers are off the press.

The profession of teaching usually lags behind the world of business in the application of new inventions and new methods to the task at hand. One of Edison's simplest inventions, the phonograph, with proper application to the study of languages, might have gone a long way toward the correction of our American linguistic provincialism. All these years the business office has used the dictaphone. Only now are universities discovering its possibilities as an auxiliary to instruction.

Linguistically, radio is the greatest force that has ever appeared in the world, the force which must eventually level out the differences of pronunciation of all lands speaking the same tongue. It will thrust upon us the necessity of understanding the principal languages of the Western world. The influence of talking pictures tends in the same direction.

With the possible exception of music, there is no other subject to which this great invention brings such encouragement as it does to the study of languages. It revives the withering linguistic interest with a fresh emphasis upon the spoken word. Language instruction had suffered from a sort of "dry rot." Without the aid of such inventions as we have today, language study had become nearly soundless. In general, language instruction used only one approach,

[3] Ohio State University.

namely, that through the eye, which has been called the "cold" approach, as compared to the "warm" approach through the ear. At this low ebb the teaching of the foreign idiom practically limited itself to formal grammar and translation, probably because monolingual teachers clung to these practices as the only tangible and "examinable" quantities they could find in a foreign language.

In the last few years various efforts have been made to inject by means of the radio a little new life into language instruction. Such efforts were helpful, but they failed largely for two reasons, namely, that they were not definitely tied into the program of study of our schools, and that they used no definite text adapted to this form of instruction. These efforts were radio talks about the language or talks in the language, not a prepared series of oral lessons.

At the Ohio State University we were confronted with the problem of placing in our courses students who had had language courses in high schools. If they had been grouped according to the color of their hair instead of the number of years they had studied French or Spanish, the classification could not have been much worse. It seemed that the only solution was to inaugurate placement tests. In such tests it was found that the quickest and safest index to a student's proficiency was his oral ability. But it was in this part of the test that the students showed the greatest deficiency.

With the best of native professors of French and Spanish available, with a broadcasting station on our campus, why should not the boys and girls studying one of these languages in the high schools of Ohio have the advantage of hearing a native pronounce his language, giving a lesson right in their classroom?

The plan was started a year ago to give the high schools time to arrange to put classes on the hours of the radio lessons. Robert Fouré, of our French Department, is giving French lessons over WEAO on Mondays and Wednesdays from 9:15 to 9:45; and Santiago Gutierrez, of our Spanish Department, is giving Spanish lessons at the same period on Tuesdays and Thursdays.

These lessons have been very well received. Many interesting letters and reports have come to these professors, indicating certainly that the lessons are a great assistance in the spoken language. Indeed, we have received such encouraging reports that we plan not only to continue this service but also to make the lessons available at more hours of the day.

I do not feel that radio instruction in languages will ever replace the language teacher. In fact, the teacher becomes more necessary than ever. With the vitalizing interest arising from the emphasis of oral work, the rôle of the teacher becomes at once more interesting.

Serving the World with Multi-Lingual Motion Pictures

By M. R. CLARK[4]

FOUR YEARS AGO THERE WAS PRESENTED at a theater in New York City a daring experiment in entertainment that was destined, in a few short months, to completely revolutionize the entire motion-picture industry. This "experiment," the first talking film, was so amazingly successful that within a short time producers were forced to scrap millions of dollars' worth of silent film equipment, and spend many millions more erecting sound studios. Stars, whose names had been household words for years, were released from their contracts, and in a few months forgotten! Players who had long struggled for recognition, without success, suddenly became famous. Old line directors and writers, stand-bys of the silent film, tried this new medium of entertainment, and were found wanting. Cameramen and other studio technicians had to learn their jobs all over again, or be crushed in the sound stampede. It was an upheaval unparalleled in the history of American art or commercial enterprise.

Then, adding to the chaos, came rumblings of discontent from the patrons of motion-picture theaters in Tokyo, Berlin, Rome, Buenos Aires, Stockholm, Madrid—every corner of the globe! In a comparatively short time the rumblings swelled into a roar of protest. "Give us native dialogue films," they cried in a dozen or more different tongues! "Complete the Tower of Babel," they might as well have ordered.

In an endeavor to meet this emergency, we leased the old Gaumont Studio in Paris and also started to build a new European Hollywood at Joinville, six miles outside of Paris. Scouts were rushed into the European countries to secure writers, actors, and directors of the legitimate stage in these respective countries and hurry them to Paris. In six months we had completed one of the most modern studios in the world, covering over five acres of ground, and boasting six sound stages fully equipped. The program called for a twenty-four hour a day production schedule, with the companies of the various countries following each other on the different stages as the various productions took form. The final result was that we were able to supply our foreign customers with over one hundred full-length pictures, made in twelve different languages, within the first six months of operation. To this program was added a series of short subjects, news reels, and other novelties. You can imagine

[4] Paramount-Publix Corporation, Columbus.

what chaos would be possible with all of these various temperamental people brought together from virtually all the capitals of Europe.

I should like to advance a thought regarding the contribution we can make to the teachers of foreign languages in the United States through the medium of these films, which are all available here in this country. If it is possible to show before an audience of students of the French language a complete picture acted by the best talent of the French theater, I am sure such a showing would be of great benefit in the teaching of proper pronunciation and translation of the language. The same possibility applies to the teaching of German, Spanish, or any of the other languages taught in the schools and colleges of the United States. We are materially helped in the use of this medium by the fact that Western Electric has just perfected a new type of noiseless recording which eliminates all ground noises and other disturbing factors in the recording of the human voice.

I am sure that any of the theaters in towns where colleges or large high schools are located would be very willing to co-operate in obtaining these films and showing them for language classes at times that would not conflict with their regular performances. I hope the time is not far distant when, as the value of this method is further demonstrated, the various high schools and colleges will be equipped with sound apparatus, so that these foreign films may be used in many institutions, if their use proves beneficial. I believe, however, some concerted action on the part of the various institutions interested would be necessary in order that the films so used could be circuited from city to city after their arrival from the laboratories. At the present time, we are using many Spanish films in Southern California and in the states bordering on Mexico, and French films throughout Louisiana and the Province of Quebec. These productions are being enthusiastically received, and we are hoping for a further expansion throughout the entire country. So, unconsciously, we become the ally of all teachers of modern languages in furthering the wish to enjoy and appreciate the languages of other countries.

The Development of Modern Music

By HENRY COWELL[1]

MODERN MUSIC, OR MUSIC EMPLOYING new musical resources in its construction, has had until quite recently a rather dubious reputation. Its merits were seriously doubted by conservative musicians. Now we find that modern music is performed by nearly all leading orchestras and virtuosi, and is giving more and more genuine pleasure to music lovers as they become accustomed to it. Yet little is known concerning modern music, even among musicians. The question is frequently asked, what are the laws governing the construction of modern music, and how have they arisen? What is the relationship between the new music and the old?

An examination of musical history shows us that the tendency to experiment with musical materials is nothing new. In every period of the development of music, certain composers have utilized materials new to their time. These composers have always been called "modern" composers. There has always been a strong opposition to them in reactionary circles. In a minority of cases, these "modern" composers and their new-found materials have proved unimportant. In a large majority of cases, however, these composers have been the ones later recognized as being the most vital of their age, and their materials have become the classic standard for the ages to come.

If we turn to harmony as a musical material which has had a typical development, we find that every interval we now use in harmony, even those intervals which seem most self-evidently pleasurable, have been accepted into music only after a long period of probation. Each of these intervals has gone through the same process before being accepted. When an interval is first used in music, it is invariably felt to be discordant by most listeners, who protest that it is ugly, meaningless, and unsuitable for music. This, as I have pointed out, has been the case even with what now seem to us the simplest intervals. The next stage is that the interval, which has been used in the meantime in spite of protest by the "modernist" composer, grows a bit more familiar, and finds acceptance to the listener as a dissonance, an interval which is suited for

[1] American Composer, Pianist, Lecturer, New York City.

musical use provided it is resolved or succeeded by another more familiar interval. The third stage of appreciation is that, on still further hearing of the interval, the auditor no longer demands that it should be resolved, as he has become familiar enough with it so that he recognizes its independence. At this stage, the interval seems to him a perfect concord. As an example, let us take the case of the interval of a major third—C to E. In very ancient music this interval was not used, as it was felt to be an utter discord. Then came a period in which this third was permitted, provided it resolved to either the octave or the fifth, these two being the intervals which were accepted at that time as concords. After that the period followed which we know best, from a bit before Palestrina to the twentieth century, in which the third is regarded as a concord not needing resolution.

There is a fourth stage in the appreciation of intervals which seems to be just as inevitable as the others. If an interval which has come to be recognized as a concord is used too frequently, the auditor becomes tired of it, sometimes so much so that it irritates him just as much as a discord, and the interval goes through a period of being avoided as banal. This has been the attitude of many of the modernists in avoiding the use of very simple concords alone. Many people object to this attitude, but it has a great deal of historical precedent. In early musical times, the intervals of the fifth and octave were the only recognized concords. On this account, these intervals became so overused that music lovers were bored with them and created rules of harmony, which are still used in the study of harmony, forbidding the use of consecutive fifths or octaves, and forbidding the use of these intervals alone. The fifth, for instance, cannot be used alone according to conventional harmony, but must be accompanied by the third, forming a complete chord.

Many modern composers have come to have the same feeling concerning the thirds that the ancients had concerning the fifths—that they are uninteresting when used alone, and that in order to be interesting they must be accompanied by some other interval. The modernists, then, do not discard materials from the past, but use and add to them. They will be apt to use common chords, but with the addition of some other tones as well; they also frequently use two common chords simultaneously. Scriabin ends one of his works (Prelude, Opus 74, No. 2) on a major and a minor chord at the same time!

Modernists, then, are not composers who have broken away from the classics, and try to throw away all the old concepts of music. They carry on the same sort of progress which has always

existed through musical history, utilizing all classic materials, but adding to them new materials of their own. It is impossible to know whether there is living at present any composer who will be regarded in the future as of the same importance and greatness as Bach or Beethoven. But if there are any such men now, one must look for them in the ranks of the moderns. All those who work with new materials are not great; but any great one who may exist will surely have the strength and independence to create his own musical materials. No composer of greatness has ever failed to add something to the musical style and materials of his time.

American Composers

By HENRY COWELL[2]

MUSICAL COMPOSITION IN AMERICA has some sharply defined outlines, and some interestingly divergent points of view have been represented in the developments leading up to the present. The musical public, however, does not seem to have an adequate knowledge of the styles, aims, and groupings of American composers. This is rather natural, because the opportunities to hear important American works are very infrequent. The foreign men who are the conductors of all our major orchestras have used on their programs, according to the statistics of Daniel Gregory Mason, of Columbia University, about two per cent of American works, the rest foreign. Of the two per cent which have been performed, many are by foreign-born men who have become American citizens, but who are very European in their musical style. It is therefore not to be wondered at that our concept of indigenous American music is hazy.

Through the middle of the nineteenth century, serious music struggled in America. An American composer felt quite self-satisfied if he wrote music in serious style, without having to think of writing in an individual or especially American style. He accepted European standards without question. The result was that we produced, during this period, no one distinctively American in his work. Edward MacDowell was one of the first to try to make an American music. He did this, however, with titles, not by creating a new musical idiom. His musical style was European, being taken largely from Wagner and Grieg, but the American titles started the idea of the possibility of an American national music.

Following MacDowell came some groups of composers who

[2] *See* footnote on page 375.

attempted to create a national American style from folk music. They found that much of our most sung folk music came from England. One group, however, discovered original features in the American Negro music, and attempted to build a music on that, while another group tried to do the same with Indian music, claiming that Indians, after all, are the only real Americans. Both these attempts were unsuccessful, because the composers made the mistake of taking their Indian or Negro themes and carefully removing from them all the most characteristic elements, denaturing them until they might have come from anywhere, and then treating them with conventional, European-style harmonies and rhythms!

The first American composer who really succeeded in creating a distinctively American style from the soil up is Charles Ives. He is a Connecticut Yankee, raised in a small village, early imbued with the spirit of American village music. He studied all conventional modes of music at Yale, but this did not deter him from building for himself from the beginning a new musical style, having its roots in American typical practices. In the music of Ives, all the little things which make American native music different from that of any other land are emphasized rather than removed, and made the basis for great symphonic and other works. Ives developed cross-rhythms, new harmonies, polyharmonies, jazz-type-rhythms with complete independence, and used them in his music as early as 1897, long before they were used by the people who are usually credited with their invention. His style is abundant, containing a veritable universe of musical possibilities. Another Yankee, Carl Ruggles, from Cape Cod, has also succeeded in developing a unique style, and in as much as he is American and developed the style in America, without European teaching, may we not regard the style as American? In his case, though, the style is not based on the folk music of this country; it is a self-built-up style, very closely knit, very polyphonic style in which each note is scrutinized with greatest care before being permitted to enter a composition. No composer living is more careful to exclude all nonessential material.

In Europe today, there is a general notion that jazz is the only original music America has produced. This is, of course, untrue. Our most serious indigenous music, unfortunately not as well known as jazz, is written by men like Ives and Ruggles. Jazz, however, though not an Anglo-Saxon product, is undoubtedly American. It is Negro minstrel music as interpreted by "Tin-Pan-Alley" New Yorkers of Hebrew origin. Some of our talented young composers have attempted to write classical music based on jazz. Aaron Copland has succeeded best with this, by isolating the elements of jazz,

and piling them up, one on top of the other, making music jazzier than jazz! George Gershwin has failed to create anything worthy in this idiom, because he makes the mistake of removing the jazzy elements when he arranges his jazz for "classic" works, and the residue is a sticky and commonplace sentimentality.

The real division among the modern American composers now, a sharp one, is between those who regard music as something for the purpose of amusement, and those who regard it as a medium for expressing greater depths of feeling. The former group, that work together closely, is composed of men who have studied for the most part in Paris, and have become distinctly influenced by certain modern French philosophical trends. The latter group are for the most part made up of men who have studied in America, and who, although often cruder in technique than the others, are building up a style distinctly rooted in the feelings and traditions of this country.

Besides these two groups of more distinctive composers, we have also, of course, men like Taylor, Cadman, or Carpenter, who are Americans but who make no attempt to create a distinctively American style. One cannot write an American opera by mixing Wagner, Puccini, and a little sugar water. Unfortunately, it is compositions like these that are most often played and are best known to the public as the work of American men. It is on account of the prominence given to such works that we have so poor a reputation in the musical creative field of Europeans. It is to be hoped, therefore, that our leading musical organizations may be persuaded to undertake the performance of some of the more distinctive works by the more truly indigenous American composers, now so rarely heard.

The Ohio Program of Guidance

By D. H. EIKENBERRY[1]

To many people the term "guidance" carries the idea of vocational determinism, a technical procedure for determining the particular life occupation of each individual boy and girl. This concept of guidance is in direct contrast to the definition proposed by the Ohio State Department of Education: guidance refers to all the activities of the school and of the school's co-operating agencies that provide opportunities to pupils for self-discovery and for self-realization. This definition stresses the idea that guidance is a broad function of education, that the task of guidance cannot be accomplished by the school alone, and that the emphasis in guidance is on self-guidance.

The state program of Ohio had its beginning in a state-wide conference held at Columbus, January 30, 1930. This conference led to the appointment of a widely representative State Advisory Committee on Guidance and to the creation in April, 1930, of a Division of Guidance. The program announced in the first publication of the Division, *Guidance in Ohio Schools*, includes six phases—health, educational, social-civic, ethical, avocational, or leisure time, and vocational.

The major purpose of the State Department during the present school year has been to carry to the school administrators and teachers of the state a philosophy of guidance, the central theme of which is the idea that the vast differences existing among our boys and girls, coupled with their immaturity and inexperience, call for guidance in the task of equipping them to solve their own problems and to help in the solving of the many problems presented by our complex civilization. To this end our first manual, *An Introduction to Guidance*, was prepared. This book has already been widely distributed and discussed by Ohio teachers and administrators.

The State Department has projected a series of manuals that will bring to the schools of the state the most definite and concrete aid possible. Among these will be a manual for the elementary grades, one for each of the junior and senior high-school grades,

[1] Ohio State University.

two dealing with opportunities in colleges and universities, one with opportunities for guidance through regular subjects of instruction, one with opportunities through extra-curricular activities, and one with opportunities through co-operation with extra-school agencies.

The parent-teacher association, by virtue of its purpose and its organization, can contribute much to local guidance efforts. First of all, the members of local organizations may select guidance as a subject for extended study and discussion. Its meaning, its scope, its methods, its opportunities are fruitful topics for consideration. The State Department will be glad to supply local organizations with lists of the best books available in the field of guidance.

In the second place, local organizations can be of great service in educating the community to see the need for guidance, to see that the great task of the school is to prepare our boys and girls to live happily and effectively in a complex world that is constantly presenting difficult individual and social problems.

Finally, local organizations can do much by encouraging administrators and teachers to begin guidance work wherever it may most be needed, gradually building up a comprehensive program that utilizes all of the resources of the school and the community. An intelligent interest in guidance on the part of parent-teacher associations must mean definite encouragement to those who are responsible for our educational programs.

What Shall I Make of My Boy?

By FRANK PIERREPONT GRAVES[2]

"WHAT SORT OF JOB SHALL I GO AFTER?" asks the boy leaving school. "What shall I make of my boy?" queries the father. "How ought I to advise John about his life work?" the teacher reflects. These questions are common, insistent, and universal. They have been asked at all periods in the history of our own and other countries, and have been the occasion of much conscientious thought, great misgivings, and serious worry. They are concerned with the great problem of "vocational guidance," which has been and still is second in importance to none in the educational world. How, then, shall we answer these questions?

Until recently we had made but little progress in this direction. We have in the past generally assumed that a boy could succeed in

[2] President of the University of the State of New York and State Commissioner of Education.

any line of work whatsoever, provided he displayed sufficient industry and perseverance. But today, while we have not reached many satisfactory conclusions, we have at least come to understand that this is not true, except in a very limited sense. We now feel sure that only a few boys can succeed in many fields of endeavor, and we believe that all can do much better in certain lines than in others. Of course, no one holds that we are predestined for a particular job in life and no other, any more than it is now supposed that a particular woman was predestined to be a particular man's helpmeet. One's life work, like one's marriage, may have been arranged in heaven, but considerable elasticity must have been conceded to propinquity, environment, and the peculiarities of other people.

We cannot doubt, however, that a man has often chosen a vocation in which he lacks practically all the qualities essential to success, while he possesses in a high degree qualities that would have made him conspicuous in some other line. Occasionally this misfit situation has been revealed by a fortuitous change of occupation. We have no better evidence of this than that furnished by the case of General Grant. As a farmer and storekeeper, Ulysses S. Grant was almost a total failure, but, through the exigencies of the Civil War, he reached the zenith of fame as a soldier and strategist. And, to pass from the sublime to the ridiculous, it is well known that "Bud" Fisher made only a fair living as a draftsman, until a misfortune deprived him of his right hand and the possibility of following his chosen occupation. It may be that the newspaper and cinematic world could have continued to exist without the creation of "Mutt and Jeff," but assuredly Mr. Fisher would never otherwise have risen to fame and fortune.

Yet, despite the overwhelming evidence of the need for selecting one's life work with thought and care, we appear to have been almost criminally negligent. Most of us, as the poet Horace and a host of philosophers of the past bear witness, have been allowed to drift into our vocation with little or no consideration. The choice of an industry, business, or profession has for most boys been a matter of chance, haphazard, or accident. Serious thought about and careful analysis of the situation are all but unknown. And once one has become settled in an occupation for which he is but poorly adapted, there seems to be left simply the choice as to whether he will persist with very meager success in life, or constantly shift to some new employment in the vain hope of finding something more congenial or more in keeping with his ability.

In the United States, especially, is there need of vocational guidance. Americans hold it as axiomatic that everyone should be given

an equal opportunity in selecting his life work with everyone else and that this occupation should be chosen with due reference to where each can be of the greatest service to society. This policy entails an infinite number of possibilities and almost endless complexities. Any boy may enter nearly any vocation. The situation in the Old World is quite different. There a boy's vocation is largely determined by that of his parents. In Prussia, to take an extreme example, his career has been practically settled at nine years of age. If he is the son of a baker, he will almost inevitably be forced into baking, and if the child of a butcher, he will in all probability become a butcher or enter some allied trade; but there is no likelihood whatsoever that the son of a preacher or college professor will ever become a butcher or baker, and both he and his family would be regarded as forever disgraced, if he did. Whereas, in this land of ours we see no reason why the son of a butcher may not have far greater ability as a statesman, lawyer, or doctor than the son of a professor, and if he does, we maintain that the welfare of society demands his entering that profession. Nor do we hold it a disgrace for a banker's son to become a baker, but feel that he should choose this very occupation if his ability should be greatest in that direction.

Clearly, in America, we will never submit to prescription as the means of vocational guidance. It makes little difference to us whether the edict as to our occupation is issued by a despotic government, as in Prussia, or by a group of highbrows, called "philosophers," as in Plato's *Republic*. If one is in doubt as to the American attitude toward prescription, let him undertake to intervene in a matter of selecting a lifemate, as also prescribed in the *Republic*, and he will soon find, however good his intentions and however wise his judgment, that the parties concerned will never brook his interference. In much the same way will be regarded any attempt to prescribe one's life employment. We may, of course, practice negative prescription, and keep people out of certain vocations for which they are notably unfitted by nature or training. For example, we do not permit one who is color-blind to become a locomotive engineer, and the state insists that one who cannot pass the necessary examinations shall not enter law, medicine, or teaching. But it is contrary to our principles to attempt to force people into given occupations.

Vocational guidance in the United States evidently is properly a matter of education for which the public school furnishes the only adequate agency. The home may be of assistance, but it cannot assume full responsibility, as fathers and mothers only too often have distorted ideas as to the desirability of various occupations for their children. They generally want their boy to have a "white-collar"

job, a position where he can wear good clothes and secure good pay in return for little work, with little or no regard for his abilities, interests, and needs. In this way, parents, as far as they are parents, seem to lose all sense of their American ideals and revert to the prejudices and methods of the Old World. Fathers and mothers, too, have notoriously exaggerated ideas of the ability of their children, and only too often are they eager to perpetuate the family name as a lawyer, physician, minister, or professor, unsuited though the boy may be to any of these professions. Obviously, they cannot, unaided, be trusted to advise their sons, and so the schools and teachers must primarily perform this function. There is no opportunity or obligation more obvious than the co-operation of father and mother with the teacher and the school in the training and guidance of their children. Ohio is most happy in possessing a State Director of Education who has been farsighted and wise enough to stir the efforts of both parents and teachers to this important end.

In fact, the word "vocational" is itself misleading. It seems to imply that the guidance is to be conducted purely for those who leave school early and intend to engage in some manual occupation, whereas the boy who expects to continue in school and enter a profession is even more in need of attention. Guidance is required, too, for phases of life entirely outside that of one's vocation. It is fully as much needed in citizenship, the use of leisure time, and personal development. To guide our pupil aright, we must take into account the whole child, his physical development, his social needs, his mental and spiritual sides, and his entire life as a worker, citizen, and individual. Guidance is fully as essential as a function of education as the acquisition of knowledge and skills or the ability to think and solve problems. It has added constantly to its program, and while this discussion is confined to the vocational phases, guidance now includes far more than these original implications.

As the undertaking must be broad and thoroughgoing, even when limited to the vocational side, we cannot begin our guidance too early. We must start to study and assist the boy in his outlook upon life at least as early as the seventh grade, when his interests, abilities, and personal peculiarities begin to protrude. The work must be careful and prolonged, if we are to do him full justice. It must continue through the rest of the elementary grades, through the high school, college, and professional school, if he goes that far.

It may now be inquired how much we have been doing to this end. What progress have the schools made in vocational education? In the first place, much is being done on the side of the child's physique. Through physical examinations and medical inspection,

efforts are everywhere being made to ascertain the types of vocation for which a boy is by nature fitted, and, by removing physical obstructions, to increase the range of occupations in which he may engage. Nor is the survey of the child limited to a better acquaintance with his health and physical history. By means of a set of careful statistics, passed on from grade to grade, and through frequent consultations with the parents, as complete a record as possible is kept of a boy's family, social background, school history and achievements, and all his special interests and abilities.

Wise and resolute efforts are also put forth to keep him in school longer, in order that he may become acquainted with a greater number of occupations and be better fitted for any he may choose. Such works as the bulletin, *The Money Value of Education*, issued by the United States Bureau of Education, have done much to reveal to young people the actual material advantage that comes from prolonging the period of preparation in school. The value of a high-school education in extending the possibilities of one's life work has likewise been made evident in many ingenious ways by the school itself. The high schools of Cincinnati each year send out a personal letter to each pupil in the eighth grades of the city describing the opportunities presented by the high-school training and urging them to take advantage of it. In Chicago a pamphlet to the same effect is published by the high schools and sent not only to the pupils completing the grades but to their parents as well. Probably the most effective scheme is that pursued by the High School for Girls at South Philadelphia, which, upon several occasions throughout the year, invites the eighth-graders and their fathers and mothers to visit the school and see its work for themselves.

All these methods have done much to get the people to understand that the American high school is no aristocratic institution, like the German gymnasium, but is intended for them and their children, and will greatly multiply the opportunities in life for those who attend it. Such an attitude will also tend to make clear to school authorities that if pupils are to find it advantageous to stay in school longer, the work of the high schools themselves must be considerably modified.

A more direct means of strengthening vocational guidance has been found through the study of occupations. This work is usually begun in the eighth grade, or in the ninth, where the seventh and eighth grades are merged with the ninth in that institution so effective for guidance, the junior high school. By means of this study it is possible to secure a real consideration of and interest in a variety of exploratory courses and occupations, and not only to furnish the

pupils with the facts necessary to an intelligent choice of work, but to discover their "bents" through the interest they display in one field or another.

Many satisfactory books on the study of vocations have been published. The rehabilitation section of the Federal Vocational Board has issued a splendid series of pamphlets to show the returned soldiers and sailors the variety of occupations open to them and the advantages and disadvantages of each. Likewise, certain industrial establishments have put out literature indicating what might be expected in the way of training and financial return by those entering their particular lines. A number of schools go further than merely to study occupations through books. Vocational and industrial surveys are often conducted by means of periodical visits of the pupils to factories, mills, and mercantile establishments. To this visitation work numerous junior and senior high schools have added a study of vocations through lantern slides and even moving pictures. This latter device has the advantage not only of being most graphic and interesting, but of enabling the pupils to witness each part of a process as slowly and as often as they wish.

In a number of schools, too, talks are now being given on various lines of work by men of prominence in the professional and business world. To make this work uniform and effective, and to insure that the necessary points are covered, the instructor usually prepares in advance an outline for the various speakers to follow. Some schools which, like those at Gary, are equipped with shops have every pupil work at each of various industries for a few weeks at a time, that the schools may discover any occupation the pupil is especially interested in, and for which he is particularly adapted. In all these methods of direct study much may be added through the co-operation of the teacher of English, who can have the pupils write on the industries they have visited, seen, or undertaken. Thus the processes may be made more clear and vivid, and a new zest given to what is ordinarily felt to be an irksome task.

All these schemes, however, for determining the aptitudes of individuals and properly guiding them in their choice of a vocation are but tentative and crude. Can we not in this age of advancement find some more scientific method? We have long been seeking for this. When some of us were still youthful it was the custom of some parents to take their sons who were about to finish school to a phrenologist that the particular genius of the young hopefuls might be scientifically "discovered." While phrenology was in those days a more reputable practice, these parents might for practical results as well have consulted a clairvoyant. The same was quite as true

of physiognomy, the pseudo-science that for a time succeeded phrenology or was combined with it, as a means of vocational guidance, although we seem at present to be passing through a recrudescence of this old necromancy at the hands of a mountebank, whom it would be both libelous and good advertising to mention by name. Nevertheless, it would seem as if something of value might be accomplished through applied psychology. When we contemplate the almost magic way in which, through mental tests, the United States Army was enabled during the World War to select the thousands of men needed in a "jiffy" for officers, and the scientific procedure by which the selection and classification of skilled workmen were carried on by the same body, we are tempted to conclude that the whole problem of vocational guidance has already been completely solved by psychology.

The psychologists themselves, however, were the first to warn us that we did not yet by any means possess a panacea. The devices used by the army were tests of general intelligence, and are by no means as refined as we may ultimately expect them to be. We have now come to realize that general intelligence is not unitary, as we had once supposed, but is a very complex process, and we have probably not yet come to know all its constituent factors. Moreover, a test of general intelligence is not sufficient. Occasionally mistakes were made by the army testers in the selection of officers through relying upon general intelligence too exclusively and not taking the factors of special fitness into account. A private soldier who was rated rather low in general intelligence was sometimes able afterward to demonstrate that, through the possession of a good voice, a fine physical presence, or unusual courage, he was just the man to have been selected as an officer. Hence, we shall have to take into account the items that constitute special fitness in the various vocations and make a careful analysis of the factors required in each occupation before we can utilize psychology to the fullest extent and make our guidance genuinely scientific. That this can be done we have no doubt, for it has been accomplished already in several vocations.

Obviously, what we need for scientific vocational guidance is more investigators and experts and further study of mental factors and tests. Even now it is evident that we should no longer allow boys to stumble along blindly, or be catapulted into their various life callings. And because we are Americans and have American ideals, we cannot resort to force or prescription. Vocational guidance of a sympathetic and scientific sort must continue to develop in method and grow in approval. I am confident that parents and teachers and your parent-teacher associations can be relied upon to do their share.

Relationships of Physical Education

By THOMAS D. WOOD[1]

PHYSICAL EDUCATION, DEFINED WITH particular consideration of the relationships which it bears, is the contribution made to the complete education of the child and youth by the fundamental psychomotor activities, the big brain-muscle movements. These activities include fundamental life movements; play, athletic and dramatic games; dancing, swimming, gymnastics, camping, hiking, scouting; and social-service and prevocational activities, such as gardening, farming, and housekeeping, which are vigorous, healthful, and genuinely educative.

If the term "physical education" is used consistently, it must be considered as a program of activities having worthy objectives, educational in scope and type, to be obtained by means of these fundamental big brain-muscle activities. It is important to consider it not education of the muscles, but education by means of the activity of muscle, nerves, and brain centers. As one psychologist has stated it, "Muscles can be trained; only the brain can be educated."

The purpose of physical education is, in the large, identical with the rational purpose of general education, aimed at the same ultimate goal as the other departments of education. The purpose of physical education is differentiated from other phases in relation to the selected materials and instruments for attaining the general object of education, which is preparation for life, and which is much better defined even for physical education in terms of mind than of body, in as much as for human purposes and for the highest realization of human effort the body is best considered as the instrument of the mind, the organ of expression for the soul and personality of the human being and not as an object of development or culture for its own sake.[2]

The first relationships of physical education for our consideration are those which have to do with various definitions or concepts of education as a whole. Education has been defined as "increase of consciousness." This is a brief statement which requires quite extended and careful psychological and philosophical explanation.

[1] Teachers College, Columbia University.

[2] Wood, Thomas D. *Ninth Annual Handbook of the Physical Education Society of New York and Vicinity*, p. 10.

The best teachings of progressive physiological psychology today clearly point out the vital factors and contributions which the activities and experiences gained through a sound program of physical education may make to the development of the child or youth as an intelligently and rationally conscious human being. This relationship may be explained further by the following statement from the *Ninth Yearbook*, prepared by the speaker in 1910:

> The main function of education, perhaps, is to train the human mechanism toward efficiency as an instrument of self-expression, with reference to the various opportunities and responsibilities of life, at the time and later. The child learns far more of permanent value through what he does—and this always means neuro-muscular action of some sort —than through what he sees or hears or perceives in any way directly with the five senses. In fact, perception of sensation depends on some degree of activity. Motor sensation is the great cornerstone in the foundation of human education. The experience of a Helen Keller demonstrates how much can be accomplished in education without sight and hearing if the main avenues of sensation from movement are left open.[3]

Bagley has given this definition of education: "Education . . . is the process by means of which the individual acquires experiences that will function in rendering more efficient his future action." [4] Careful study will indicate increasingly to broadly prepared and qualified students and teachers in physical education the many important elements in such an educative process which may be contributed by a program of physical education.

Education, again, may be defined as the most abundant and satisfying life for the individual each day, which makes the best preparation for all the days ahead. It is suggested that adequate criteria for judging the value, adequacy, and success of elements in a program of physical education may definitely be based upon this definition, with consideration of all of the elements, activities, and methods involved or implied in it. Finally, physical education may be defined as the discovery and development of personality for the sake of the highest service and satisfaction.

Without taking the time to consider the specific relationships which physical education may have, or should have, to such a concept of general education, it may be suggested that if education is thought of as self-discovery, then it would be apparent that the conscious purposes of the growing child or youth in self-discovery have important relationships to the consciousness of the teacher or supervisor with reference to the recognized aims and objectives.

[3] Wood, Thomas D. *Ninth Yearbook of the National Society for the Study of Education*, p. 10.

[4] *Educative Process*, p. 22.

Physical education, in another set or type of relationships, will be seen to have important contributions to make to the mental, social, ethical, and physical traits and characteristics of the individual.

Physical education may train the human mind, become a means of developing a culture intellect, and thus take its place among recognized forms of cultured material in three ways:

1. By sensitizing the nervous system so as to bring the life constantly into more intimate relation with its environment.

2. By helping to instigate factors of consciousness so as to make thinking more effective.

3. By bringing the body under more perfect control of the mind and so accomplishing a more perfect control and mastery of the environing world.[5]

G. Stanley Hall in terse phraseology deals with this relationship:

It is because the brain is developed, while the muscles are allowed to grow flabby and atrophied, that the deplored chasm between knowing and doing is so often fatal to the practical effectiveness of mental and moral culture. . . . The trouble is that few realize what physical vigor is in man or woman, or how dangerously near weakness often is to wickedness, how impossible healthful energy of will is without strong muscles which are its organ, or how endurance and self-control, no less than great achievement, depend on muscle habits.

Hetherington has discussed the relationship of physical education to character in the following sentences:

Because of the values of physical-training activities in the exercise of fundamental character traits, physical education must set up the proper moral habits, ideas, and attitudes, which should come out of the leadership of the activities, and formulate a teaching technique to build them. The same is true of manners and of courtesy. This leadership is supplying standards in the development of the instinct mechanisms.[6]

G. Stanley Hall, in 1908, suggested the relationship of physical education to ethics in the following epigrammatic phrases:

Physical education is for the sake of mental and moral culture and not an end in itself. It is to make the intellect, feelings, and will more vigorous, sane, supple and resourceful. It should make for control and keep the body under and make it a servant and not a master. . . . Practical ethics of body and soul is the core of all . . . The history and psychophysiology of military drill, dancing, the great national sports and games and their effects . . . the psychologizing . . . of athleticism is now its crying need. The ordinary medical side is not enough.[7]

[5] Quoted in *Source Book in Health and Physical Education* by T. H. Wood and C. L. Brownell, p. 98.

[6] Hetherington, Clark W. *School Program in Physical Education*, p. 43.

[7] Hall, G. Stanley. "Elements of Strength and Weakness in Physical Education as Taught in Colleges." *Addresses and Proceedings of the National Education Association*, 1908. p. 1016.

MacCunn sets forth in cogent sentences the relationship of physical education to the human soul:

> Spinoza makes the pregnant remark that we do not know what body is capable of. We may go a step farther and, following Aristotle, declare that we shall never know, till body finds its true function as instrument of fully developed soul. For materialism consists, not in frankest recognition of matter, but in the assignment to it of a spurious supremacy of independence. There can be no materialism in utmost emphasis upon physical education, so long as "Body for the sake of Soul" is, as it was with Plato, the presiding principle of educational action.

Physical education, again, may be considered in another set of relationships, in a third dimension, as it were, to other subjects, departments, and programs in the curriculum of the school. These relationships extend in two directions: from other subjects or departments to physical education, and from physical education to the other sciences and subjects. The biological sciences, anatomy, physiology, and hygiene, psychology, and sociology have important contributions to make to physical education, and it is of indispensable importance that trained and well-qualified teachers and leaders in physical education should be familiar with this range of applied sciences.

The relationship of physical education to the modern science of nutrition is one of great interest and importance, involving mutual contributions and interdependence. Nutrition with its more recently acquired body of significant data and scientific organization deals with the whole anabolic side of metabolism, determining in growth, development, and repair the character and quality of the organism which through physical education finds a katabolic expression in the application of energy by means of the psycho- and neuro-muscular mechanism in all the varied lines of physical-education activities. It seems of very great importance that teachers of physical education should be far better trained than is commonly the case in the up-to-date science of nutrition.

The relationship of physical education to health education, involving a clear distinction between these two subjects or programs, is one of particular significance just at the present time. It is very well stated in the Health Education report of the Joint Committee on Health Problems in Education of the National Education Association and the American Medical Association that

> the fields of physical education and health education are not identical. There is much health training and instruction, for example, relating to nutrition (and I may add, to other subjects), which is not properly a part of physical education activities. On the other hand, physical education is considered by some (and very logically), including many teachers in

this field, to include aims and objectives, intellectual and social, which belong to education as a whole are not directly or primarily included in a program of health education.[8]

Another paragraph, closely following, presents this idea:

One of the most important interrelationships of physical education with other aspects of health education is in the psychology of motivation. It is an important and striking fact that children, in order to be "fit" to take part successfully in games and sports, will observe all rules of health. The college athlete in training is a familiar example of this.[9]

Physical education had a dignified and clearly recognized place as a part of general education in the educational philosophy of ancient Greece, and in some of the writers of the Renaissance period. It is a significant fact that, within the last century in our own country, physical education had its beginning as a hygienic antidote for unhealthful conditions in education and in modern life. Physical education is therefore still considered by many, including a multitude of educational leaders, primarily and largely, if not wholly, a health measure, with health as its main objective.

In this brief presentation, physical education, it may be repeated, is considered a program-making, fundamental, and integral contribution of vital aspect to general education. Many educational administrators still consider that physical education naturally and logically should be identified with health-education programs. However, with the recent and rapid developments of health education, some modifications seem necessary in the understanding of the relationship of these two important interests in the educational program. Health education is the sum total of experiences in school and elsewhere, in the life of the individual, which favorably influence habits, attitudes, and knowledge relating to individual, community, and racial health. It is progressively more apparent in the development of the principles and programs of health education that this cannot be considered as a department, but it can only be dealt with fairly and adequately as an interdepartmental program in the institution. All subjects in the curriculum have definite contributions to make to a comprehensive, unified health-education program. It will be difficult, but it is essential for educators to gain clear understanding and a practical grasp of this complex problem, involving an interdepartmental program with sympathetic, mutual understanding and effective co-operation of all the various subjects and departments in the institution.

This is not the time to enter into very detailed discussion of the problem of health education, except to point out that very evidently

[8] *See* pp. 51–52.
[9] *See* p. 52.

a novel, and perhaps unique, type of organization will be needed in the field of health education, involving interdepartmental committees and programs, and a form of direction or supervision which will bring into effective, mutual understanding and co-operation all of those individuals and all departments necessary for this complex and co-operative undertaking.

The present trend in the development of health education as a comprehensive program with the inclusion of all subjects and activities contributing to health will naturally, and with increasing frequency, give recognition to other subjects and departments as compared with physical education, not only in teaching but in administrative relation to the health-education program. For example, the supervisor of health education in one important state is a person whose major interest, training, and experience have been in nutrition. In many state and city school systems, however, the educational administrator still thinks of physical education as more closely associated than any other subject or department with health and the health-instruction program. In such a situation, if the instructor or director of physical education is charged with the privilege or responsibility of organizing and directing the health-education program, such a person and department will demonstrate wisdom and foresight if the customary and traditional interests of a department are subordinated to, and merged in an interdepartmental program, bringing into cordial and effective co-operation all of the subjects, departments, and individuals having relationship to such an integrated and co-ordinated program.

Editor's Note.—The sources of the quotations which have no connotations in this article could not be found.

Large Classes in Small Places

By HENRY W. LUTHER[10]

What can you do with a large number of pupils in a small space, aside from giving them calisthenic exercises and gymnastic drills? People are usually interested in what is being done and what is being tried out. I shall take you with me, therefore, on a visit to one of our Cleveland high schools, and show you by way of discussion and lantern slides what we have been doing in order to solve this problem.

The school we shall visit is East Technical High School, which has a gymnasium of 70 feet by 90 feet. This is sufficient space to

[10] Bureau of Physical Welfare, Cleveland.

take care of not more than 126 pupils at one time, allowing 50 square feet of floor space for each individual. The class we shall see on the floor consists of 216 boys, which is 90 boys more than the maximum capacity of the gymnasium. The class is in charge of only one instructor.

One of the main essentials in carrying out a program of work for unusually large classes is that of class organization. After trying out several plans we found that the only workable plan was that of following the scheme of the army by dividing the classes into smaller groups. The class occupying the floor has been divided into three companies. Each company is subdivided into two platoons, and the platoons are again divided into squads. A student leader is appointed for each platoon and another for each company. This type of organization is permanent and is carried through the entire working plan. The floor space is divided into three equal sections, allowing each of the three companies a separate area of 23 feet by 30 feet.

The description of a typical class period which follows is at present the best we have been able to work out. The period is divided into four parts. First the attendance or roll call is taken by the platoon leaders. The time for roll call does not exceed one minute and a half. Each squad in turn is asked to take three steps forward. In this formation it is easy to determine if any member of the squad is absent. The first part of the period is devoted to the teaching of introductory exercises. These consist of simple tactics such as the position of the soldier at attention, with emphasis placed upon good posture, then a right dress, facings, marking time, marching, and running. The second part of the period is conducted in open-order formation. Here the instructor presents the technique of various activities and skills to the entire class. This part of the program is essentially one of class instruction. Let me enumerate some of the activities that can be taught in open-order formation aside from calisthenic exercises. There is boxing, wrestling, dancing, the technique of games, preparatory exercises for athletics, stunts, pyramids, and so on. The third part of the period is given to squad practice, during which the leaders work with their respective groups. This is the period in which every boy is given a chance to learn by doing and to try out and improve upon those techniques and skills that have been taught and demonstrated by the instructor.

The three companies are again confined to their respective areas of 23 feet by 30 feet. This may appear to be a small place to accommodate nine squads consisting of 72 boys, but if the mats and different pieces of apparatus are placed advantageously, the available space will be sufficient to give each boy an opportunity to practice the

exercises or skills that have been prescribed for the lesson. The instructor plans the work of the squads a week in advance, and gives a copy of the complete program to the leaders. This program will include the activities to be used, the division of the floor, and the order of movement of the squads from one activity to the next.

After the allotted time for one activity has elapsed, the whistle is blown as a signal for squads or companies to shift and take up a new line of activity. This is repeated at the interval provided in the program as the period proceeds. Each company is engaged in a different activity, ranging from boxing, wrestling, tumbling, stunts, apparatus work, pyramids, track and field work, and practice of the elements of the major games such as the coach uses in the training of his team. For instance, in basketball there is foul shooting, goal throwing from various positions and in combination with passes, pivots, and dribbles. As soon as the squad practice program is well under way the instructor has time to move about among the class in order to observe the work and correct faults of the individuals and leaders as they need it.

The selection of activities for squad work is not difficult, as the program of work for that particular season will tell what ground is to be covered. Week after week these programs will follow the outlines that have been prepared for the various seasons, and for the whole year. At the close of the squad period some fast, lively game or relay is quite frequently given.

The fourth and last part of the period is devoted to showers. A shower is taken after every lesson. The towels used are furnished by the Board of Education. This school has two showers of the gang shower type. The time allowed for showers is twelve minutes.

Another main essential in carrying out a program as just described is the organization of a leaders' corps. Wherever there are large classes to be handled, no highly organized program of physical-education activities is possible without the aid and co-operation of an efficient corps of leaders. By means of student leaders the instructor is able to use a much wider variety of physical activities which help in maintaining interest. It also enables him to reach each boy through the leader, thereby coming very near to individualizing physical education. Leaders should be selected from the upper classes, or from the most capable pupils, and organized into a leaders' corps, whose members should receive special instruction in the work they will be asked to teach their respective groups.

At East Technical High there is a well-organized leaders' corps consisting of 42 members. These leaders meet once a week for a

two-hour period of instruction and practice. They are taught the technique of games and athletic events, boxing, wrestling, stunts, tumbling, pyramids, apparatus work, and are also given instruction in commanding so that they will be able to move a group of pupils about readily. Aside from this they are taught first aid and work in the dispensary by the school nurse and school doctor.

Our program of work is uniform throughout the city. We try to offer a large amount of interesting material consisting largely of seasonal activities. The list of activities selected and their distribution into fall, winter, and spring season is as follows: During the fall we teach tactics, group games, contests and relays, boxing, wrestling and the elements of speed ball, touch football, and football. During the winter season instructions are given in tactics, stunts, tumbling, apparatus work, pyramids, group games, contests and relays, and the technique of basketball. A popular game that is played during the class period in the winter months is volley ball. This may be played by a large number of players on a comparatively small space and at the same time furnish good and interesting exercise. In the spring the program consists of numerous forms of track and field work such as the broad jump, high jump, hop step and jump, shot put, hurdling, the start and stride in running, and so on. We also teach the technique of baseball, such as pitching, catching, batting, running, and sliding.

Aside from the regular instruction in physical-education activities, every boy is given an opportunity to take part in a recreative program which is conducted after the close of school in the afternoon. Whatever time and energy the instructor has after his regular daily program is finished is devoted in getting the mass of boys interested in games and athletic sports. Every high-school boy should have a chance to play on some team at some time of his high-school course. Here again, the leaders are called upon to help the instructor to organize and conduct the program and to act as officials. The practice of using the regular high-school teacher to assist in carrying out the extra-curricular work is also to be commended.

The after-school program is usually begun early in the fall with interroom basketball and must be completed by the end of December, when the use of the gymnasium is given over to the first and second school teams for basketball practice and the playing of regular interschool games. The plan I have presented is the result of experiments conducted over a period of several years. It may not meet with equal success in all schools; however, in this particular school it has not only proved to be most successful, but has also found favor with the vast majority of the pupils of the school.

An Intramural Program for Junior High-School Girls

By MARY E. DWYER[11]

In order to conduct a successful intramural program for junior high-school girls, one must consider at least four important questions: Upon what basis shall the teams be selected? What type and variety of games are most suitable to junior high girls? How much equipment is necessary? How much time may be devoted to the running of the game series?

The groups for the different teams may be selected from the home rooms, from clubs, or from daily-class squads. We have found that selection from the daily-class squads is most successful for carrying out the series in the least possible time, as both of the other two would, because of their nature, need to be handled entirely after school. Then, because many girls have home duties or other outside interests, the big purpose, "Every girl in a game and a game for every girl," is immediately defeated.

In answering the second question, with regard to the type and variety of games suitable for junior high-school girls, we speak only from practical experience in this work; we suggest a logical sequence of games with relation to overlapping points of likeness and relative simplicity for junior high be used. Such series as the following might be suggested:

	Grade VII	Grade VIII	Grade IX
Fall	Schlag Ball	Snatch Club Baseball	Hit-Pin Baseball
Winter	Newcomb	Giant Volley Ball	Volley Ball
Spring	Snatch Club Baseball	Hit-Pin Baseball	Indoor Baseball

The only equipment absolutely needed is a playing area of at least 30 feet by 60 feet, a soccer ball, volley ball, cage ball, indoor baseball, bat, and four Indian clubs. If necessary, the Indian clubs may be dispensed with, as the baseman may bounce the ball once upon the base instead of knocking over the pin.

The game series, based upon squad formation, may, if the class contains at least four squads, be played upon a round-robin plan and completed up to the interclass finals within three-weeks time. Should the class contain eight squads, it would be well to divide them into two four-team leagues and play a three-weeks round robin, taking one extra day for league winners to determine championship.

One night after school, or even an evening, if preferred, may be set aside on which to play off the interclass finals. Parents and

[11] Robinson Junior High School, Toledo.

teachers should be invited to this final playtime. The entire handling of the whole intramural program should be in the hands of student officials.

When setting out to establish an intramural program, the successful smoothness of the entire project will depend largely upon basic organization through which the greatest number of girls may participate in the activities offered; the careful selection of games in which girls show keen interest; the spirit of co-operation, responsibility, and loyalty displayed by each member who participates; and completion of each series in a minimum time space so that interest and enthusiasm will not wane. I believe that, if every teacher who contemplates such establishment of intramural work will bear in mind these points of importance, she will be the instigator of a state-wide movement which will include every junior high-school girl in a successfully conducted intramural program.

The Conditioning and Training of Athletes

By FLOYD S. STAHL[12]

A DISCUSSION OF THE CONDITIONING and training of athletes must take into consideration the special training required by the different sports. There are general training rules, however, which apply to athletes taking part in any of the major sports. The first of these is that any boy taking part in athletics be given a thorough medical physical examination. Much harm may come to the boy who is unfit physically, and much criticism may come to the Physical Education Department of any school which disregards this precaution.

Diet is another general question on which there exists a wide difference of opinion. No definite rules can be laid down to govern this factor in conditioning and training. It is not now felt that the restrictions often put upon athletes with regard to diet are at all necessary. The general principle with regard to diet should be that the boy eat in a common-sense way, being sure to get a sufficient amount of wholesome food which is required for rebuilding tissue and for producing heat energy.

The third general factor which enters into conditioning and training is the judgment of the physical condition of athletes at the time of their reporting for an athletic squad. Some athletes may report trained to the minute; others will be flabby and completely out of condition, while still others will be nearer the condition best

[12] Ohio State University.

suited for beginning practice. Allowance in each case must be made for the varying degrees of condition of these players and their work must be adapted accordingly.

Our leading coaches and trainers feel that many squads are overworked rather than underworked. I think it is a safe policy to underwork rather than overwork the squad, and to shorten rather than lengthen the practice time. It is wise to remember that most injuries in practice come after practice has been allowed to get draggy, or after a player has become excessively fatigued. A thorough discussion of training and conditioning requires that each sport be given separate consideration; there are specific conditioning requirements in each one that are not necessary in the other sports.

The throwing arm is used so much in baseball that a careful conditioning of the muscles of the arm is necessary. Baseball candidates must be impressed with the fact that these muscles must not be overworked until they have reached the proper strength and tone, and that an injury to these muscles or tendons will be quite painful and very difficult to heal. The pitcher, especially, must make the conditioning work of the throwing arm his chief consideration in the early part of the season, because an injury to the pitching arm often renders him worthless for the season, and at times ruins his career.

Specialized use of the throwing arm and work to strengthen it is not the only conditioning work required in baseball. Conditioning of the legs and the general endurance of the player are very nearly as important as the conditioning of the arm. This conditioning cannot be completely obtained through perfecting individual technique in one's position except in the case of outfielders. They get enough running in their fly-chasing work to take care of the conditioning of the legs and body.

Pitchers especially should be given not only fungo hitting, but also lots of running whether it be chasing flies, fielding their position, or plain running around the park. Infielders get a considerable amount of running in fielding their position, but should have added running on the basis work in sliding and work in running out bunts. The premium placed upon an unusually keen eye requires that baseball men should refrain from long hours of reading or frequent attendance at motion-picture theaters. In fact, anything that may cause undue eyestrain should be avoided.

In practically every event in track the legs are as important to a track man as is the throwing arm to a baseball man. Consequently, the conditioning of the legs should be a slow, careful process, in which every care should be taken to prevent overwork and in which no injury to the leg muscles is possible. An injury to a muscle or

tendon of a track man will usually mean that he is lost for the season. At least he will be unable to reach top form again that season.

It is quite important in track that not only development of the legs be given special care, but that the entire body be well conditioned to add to the strength and endurance of the candidate. Extreme care is necessary after condition is reached to prevent an athlete's going stale. It is the opinion of many coaches that a player who once goes stale will not be able to reach top condition again during that season. With this in mind, it is well to hold all track athletes to one time-trial a week, and possibly to dispense with that in the late season work.

In the individual events it is desirable that all men in the runs learn to run in as relaxed form as possible, and to reduce to a minimum the pounding of the track to do away with strain on the leg muscles. In conditioning for the jumping events, lots of running and leg-developing exercises are necessary. Too much springing from the jumping leg is harmful, and practice at jumping should not be done more frequently than three times a week. Hurdling events are of such a nature that the athlete must be given special stretching exercises to produce suppleness. In the weight events care should be taken that the athlete throws only about three-fourths of his maximum in most of his practices. The shot put and javelin are such specialized events that it is best to work the throwing arm only about three times a week. Men in the discus and hammer throw may do reasonable work daily. The legs are so important a factor in weight-throwing events that they should be given equal consideration with the rest of the body.

The nature of the game requires that conditioning be done by practicing the various fundamentals of basketball, and by actual scrimmages. Scrimmages, especially late in the season, should not be given too often, and never for a long period of time. Early conditioning in basketball is necessarily slow because of the wear of quick stops and turns upon the feet of a player until he is thoroughly toughened. Extreme care must be taken that no blisters are caused in early work of the season.

Certain injuries occurring frequently in basketball demand that these precautions be taken: protection of the ankles, either by wrapping or by special strengthening exercises; strengthening of certain of the thigh muscles and muscles near the groin which may be injured by stops and turns; strengthening of the fingers and wrists by hand stands done on the fingers and by gripping exercises; prevention of shin splints, heel bruises, and floor burns; prevention of colds; and prevention of staleness.

The fact that football is a contact game demands that work lead gradually to scrimmage, and that no severe contact work be allowed until players have been so conditioned by running exercises, by passing, by kicking, by grass drills, by dummy scrimmage, and by signal running that their muscles are toughened and they can stand severe bumps and bruises without injury. The rough nature of team scrimmage demands that most contact work be done in small group drills. Scrimmage, when necessary, should be of short duration and about once a week. Later in the season work in scrimmage may be completely dispensed with. Inexperienced players and substitutes need the scrimmage that we so often give our tired varsity teams.

Subjoined hereto are the ten fundamentals which Rockne mentioned as essential to the proper training and conditioning of athletes:

First, comparatively light work the first ten days or two weeks.

Second, every phase of your work-out should as closely as possible resemble game conditions.

Third, there should be no scrimmage until ten days have elapsed after the beginning of the season.

Fourth, do not scrimmage more than forty minutes a week during the third, fourth, fifth, sixth, and seventh weeks.

Fifth, after the first of November you may eliminate scrimmage entirely or cut it down to the irreducible minimum.

Sixth, work very light on Mondays and Fridays.

Seventh, plenty of plain, wholesome food which Dr. Meanwell describes, plenty of sleep, and just enough work, not too much.

Eighth, have as much of the practice as possible in small groups, and in case of team play, offensively and defensively, have it done in dummy style.

Ninth, keep the players happy and contented.

Tenth, do not key the team up Saturday after Saturday—they will go dead on you.

Rather than try to enforce strict training rules, most coaches feel that it is much better to develop a tradition for training whereby all players feel that, for the good of team morale, it is their duty conscientiously to refrain from doing anything that would lessen their physical efficiency.

Solar Radiation

By C. G. ABBOT[1]

DIRECTLY OR INDIRECTLY our most important interests depend on the solar radiation. The sun rays keep the earth warm enough to sustain life. Variations of their intensity associated with summer and winter, and with night and day, produce climates. Slight variations of the original output of rays from the sun itself seem to be highly influential in altering the weather. All growth in plants depends upon the application of solar energy. Our atmosphere is the source of carbon, which is a principal plant constituent. The trifling percentage of carbonic-acid gas contained in air is the essential food of plants, but it cannot nourish them without the help of radiation. The health of animals, including man, requires radiation. The prevention of rickets by the curious direct and indirect influences of ultra-violet rays has formed a fascinating chapter in the story of recent investigations.

Power is principally derived indirectly from solar radiation. Solar heat evaporates the oceans, drives the clouds inland, precipitates the rain and snow, and thus maintains the world's hydroelectric power sources. Enormous as these are, they are, nevertheless, trifling compared to the power derived from oil and coal. Oil, the less important of these two sources, comes mainly from animal life that was sustained ages ago by the vegetation fed by the ancient sun. Coal, on the other hand, is the end product of decomposition of vegetation. The enormous deposits of coal, which are now the world's principal sources of power, represent but a trifling percentage of the solar energy lavished on the earth in former geologic ages.

These are highly indirect applications of solar radiation for power supplies. It is possible, however, as numerous inventors have shown, to produce heat for driving engines by the direct absorption of solar rays. If the devices now available for this purpose should be but a little more improved, the desert regions of the world could supply cheap solar power in quantities beyond the extremest possibilities of future world demands. A lesser, but still interesting aspect of solar radiation, lies in its use for domestic purposes. Food may be cooked,

[1] Secretary, Smithsonian Institution, Washington.

and water may be heated by simple and inexpensive contrivances for utilizing solar radiation.

It may be that none of the services rendered to us by the sun is more important than its aesthetic use. The colors of all flowers represent the fragments of the complete solar spectrum remaining after the pigments of the plant world have absorbed certain rays. Unabsorbed remainders are reflected and produce gorgeous mixtures of colors. Without the green of the grass and trees, the blue of the sky, the brilliant hues of flowers, and the more somber, but yet pleasing shades of the soil, and thousands of familiar objects on all sides, we should be sad indeed.

Though thus obviously so important, it is little more than a century since measurements began to be made of the intensity of the solar radiation. Pioneers in this investigation were C. S. M. Pouillet, Sir John Herschel, and J. D. Forbes. They all devised instruments adapted to absorb the solar radiation as completely as possible and thus to convert it into heat. By appropriate devices for measuring the heat thus produced, they obtained measurements of the intensity of solar radiation. So intimate is the association between radiation and heat that many people have confused the two. Yet they are distinct and different. Radiation comprises a mixture of impulses which traverse a vacuum at the enormous speed of 186,000 miles per second. These impulses are separable by prisms or gratings into innumerable regular periodicities. These periodicities produce different sensations of color in our eyes. Many of them, indeed, are invisible to us. Since radiation can traverse the vacuum and nevertheless seems to comprise transverse waves of exceeding shortness, philosophic minds have not been contented to contemplate so great a paradox as waves traveling in nothingness. They have devised the idea of the luminiferous ether as a medium filling all space. At present, our ideas are in a state of flux regarding this abstruse subject, but at least we can think of radiation as something which can exist where there is no matter in the ordinary sense, for it comes to us across an immense void from the sun and the stars. Heat, on the contrary, is well recognized to be the motion of the molecules of material substances. The energy of radiation is competent to stir up this mode of motion called heat when, for instance, radiation is absorbed by a black object. If the object is "absolutely black," absorption is complete and all the energy of the ray is transformed into heat.

The measuring instruments of Pouillet, Herschel, Forbes, and others exposed surfaces blackened with lampblack. This substance is not quite "absolutely black," for it reflects away about 3 per cent of ordinary sun rays. Kirchhoff, about seventy years ago, proved

that a closed chamber, whether blackened or not, must be a perfect absorber. However small the percentage of rays absorbed at one impact, there is no escape, and the rays must be reflected hither and thither until by innumerable impacts their intensity is reduced below any assignable minimum. This principle of the "absolutely black" chamber has been incorporated into the Smithsonian water-flow pyrheliometer. This instrument thus far is the world's standard for measuring solar radiation.

Assuming, therefore, that we have accomplished the complete absorption of the solar ray, and its entire transformation into heat, and have devised means for the exact measurement of the heat thus produced, we then may express the intensity of solar radiation at the earth's surface. We are accustomed to express it in terms of the amount of radiation absorbed upon a square centimeter of surface in a minute of time. We measure the heat produced in calories. In these terms we find the heat of solar radiation near noon on clear days to be approximately 1.4 calories per square centimeter per minute. To state the matter in more common terms, the solar radiation, if transformed completely into work, would produce roughly a horse power per square yard whenever the sun is high in the sky. Thus even at 93,000,000 miles, the sun rays are tremendously powerful. The sun itself sends them out in every direction continually. This output equals the heat of the burning of 400,000,000,000,000,000,000,000 tons of anthracite coal per year.

Measurements of solar radiation at the earth's surface are subject to losses by absorption and scattering of the rays in our atmosphere. High up, at an altitude of nearly 40 miles, there exists a small quantity of ozone which is that form of oxygen whose molecules contain 3 atoms instead of the usual 2. Ozone is a complete absorber of all rays in the extreme ultra-violet from wave length 2,900 A. onward for a considerable range. This is very fortunate. Otherwise our skin would be blistered and our eyes blinded, for these short-wave rays which are totally absorbed by ozone are highly destructive to animal tissues. On the other hand, it is not less fortunate that ozone allows some rays on the border of its absorption band to pass, for these rays between wave-lengths 2,900 A. and 3,100 A. are indispensable to prevent rickets. The total thickness of gas of the atmospheric ozone layer, if it could be brought down to sea level, would be less than one-eighth of an inch. It is astonishing and even terrifying to contemplate the narrow margin of safety on which our lives thus depend. Were this trifling quantity of atmospheric ozone removed, we should all perish. If it were ten times greater, we could not live. Rickets would prevail universally.

Other little-considered atmospheric gases of great importance to our comfort are water vapor and carbonic acid, both minor constituents of the air, quantitatively speaking. Without the water vapor, our earth, like the moon, would cool far below freezing every night within a few moments after the sun sinks below the horizon. Water vapor hinders the incoming rays of the sun to the extent of 10 to 15 per cent, but it hinders the escape of the long-wave rays emitted by the earth by over 70 per cent. Thus water vapor acts like the gardener's glass cover of his hotbed. It lets sun rays in profusely, but holds earth rays from escaping, and so is an efficient regulator of climate. Carbonic-acid gas also acts in a somewhat similar way, but less efficiently than water vapor. The indispensable function of carbonic-acid gas in our atmosphere is to be the essential food for plants.

Other atmospheric constituents which greatly modify the income and outgo of radiation for the earth's surface are clouds and dust. The permanent gases, oxygen and nitrogen, alter the incoming sun rays, it is true, but weaken them only slightly, and hardly alter the outgoing earth rays at all. The molecules of the permanent atmospheric gases, oxygen and nitrogen, scatter sun rays more and more powerfully toward the violet end of the spectrum. But what is thus lost to the direct solar beam comes to us almost wholly in the beautiful blue rays of the sky. Dust also scatters sun rays, but without much selection of color. A dusty sky is therefore nearly white. Sunset and sunrise owe their beautiful colors to the scattering of sun rays by the atmosphere. When the sun is near the horizon, its rays shine very obliquely through the atmosphere and therefore by enormously long paths. The consequence is that the powerful tendency to scattering of the blue and violet rays so far depletes that part of the spectrum that the sky light which reaches us has a yellow or even a red tinge. S. P. Langley, third secretary of the Smithsonian Institution, was a profoundly interested student of solar radiation and atmospheric absorption. He wrote:

> If the observation of the amount of heat the sun sends the earth is among the most important and difficult in astronomical physics, it may also be termed the fundamental problem of meteorology, nearly all whose phenomena would become predictable, if we knew both the original quantity and kind of this heat; how it affects the constituents of the atmosphere on its passage earthward; how much of it reaches the soil; how, through the aid of the atmosphere, it maintains the surface temperature of this planet; and how, in diminished quantity and altered kind, it is finally returned to outer space.[2]

[2] Langley, S. P. Report of the Mount Whitney Expedition, *Professional Papers of the Signal Service*, XV, p. 11.

Fifty years ago Langley invented the bolometer, an exquisitely delicate electrical thermometer sensitive to a millionth of a degree. He took it to Mount Whitney, California, in 1881, to measure the rays of the solar spectrum under the purest of skies. He also perfected and applied a method for determining the losses suffered by solar rays in traversing the turbid and absorbing ocean of atmosphere which always overlies even the choicest of observing stations. With some improvements, we still use the Langley bolometer and the Langley method.

For the past twelve years the Smithsonian Institution has maintained stations on high mountains in desert lands where daily measurements of the solar radiation are made. Our best station at Mount Montezuma, Chile, nine thousand feet in altitude, lies in a desert where rain seldom falls and where neither animal nor vegetable life can exist. The observers must bring even water itself from

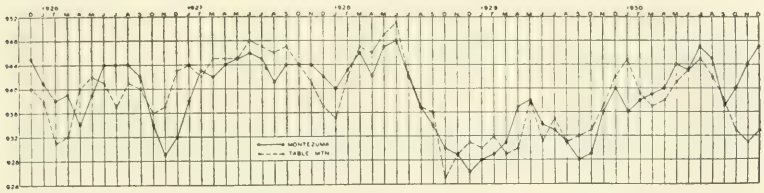

Fig. 1. Variation of the sun's radiation. Comparative results of monthly mean observations 5,000 miles apart at Montezuma, Chile, and Table Mountain, California. The two stations agree on it within an average discrepancy of .2 per cent.

the town twelve miles distant. The observations are carried on in such a way that the losses caused by the atmosphere are determined accurately. Thus we are able to measure the intensity of solar radiation as it would be found outside our atmosphere altogether, as if one were on the moon, for instance. We allow for the ellipticity of the earth's orbit, and thus reduce the results to a constant solar distance. Following long custom, we call the resulting value "the solar constant of radiation." It is on the average 1.94 calories per square centimeter per minute.

Yet the solar-radiation intensity is not perfectly constant. It varies through a range of several per cent. Figure 1 shows how two of our stations, one at Montezuma, Chile, the other at Table Mountain, California, agree within .2 per cent in tracing the variation of it by their monthly mean results over the past five years. The total range of variation shown by these monthly means is 1.5 per cent. Figure 2 shows in curve A the monthly Montezuma values since 1918. The total range in this period is 2.5 per cent. Curves C, D, E, F, G are regular periodic curves of 68, 45, 25,

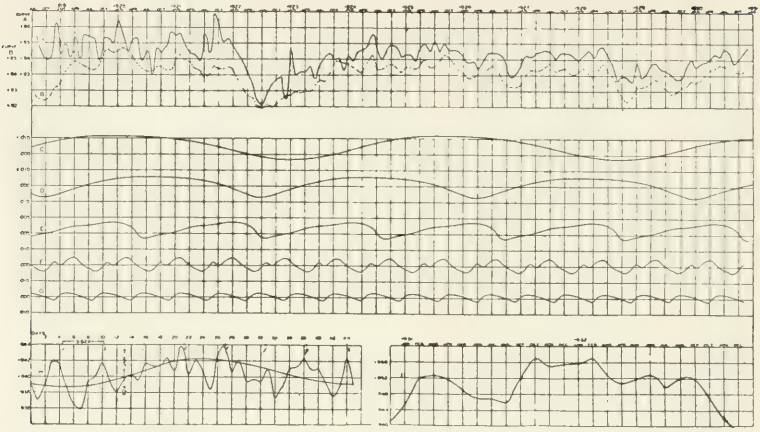

Fig. 2. Periodicities in solar variation. Monthly mean "solar constant" values, 1918 to 1930, analyzed into periodicities of 65, 45, 25, 11, and 8 months shown in curves C, D, E, F, G. Their sum in curve B closely parallels the original curve A. The years 1931 and 1932 forecast, curve I. Periodicities of shorter length found in 1924, curve H.

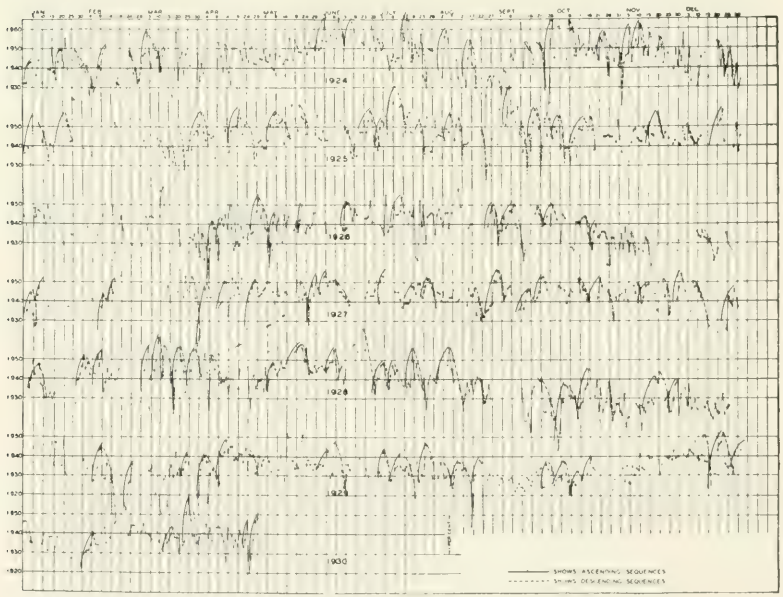

Fig. 3. Solar variation, 1924 to 1930. Daily observations at the Smithsonian Station, Montezuma, Chile. Circles satisfactory, crosses nearly satisfactory, points unsatisfactory. Rising and falling sequences of solar changes are indicated by full and dotted curves, respectively.

11, and 8 months whose sum, given in curve B, almost exactly reproduces the variation shown in the original observations given by curve A. Other shorter periods may be found in solar variation, as indicated for the year 1924 in curve H. I have ventured to forecast in curve I the probable march of solar variation in the years 1931 and 1932.

Short-interval changes are also found as shown in Figure 3. I have indicated by curved lines, full and dotted, respectively, over 100 cases each of rising and of falling sequences extending over several

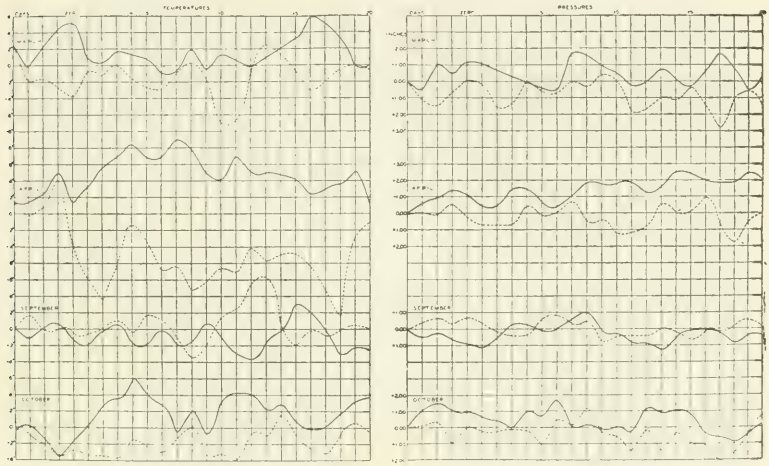

Fig. 4. Washington temperatures and pressures associated with and following sequences of solar change shown in Fig. 3. The results given here are average results of a period of 7 years. Note the opposition between the full and dotted curves corresponding to rising and falling solar radiation, respectively.

days each. The smallest ranges considered in these short-period changes are 0.45 per cent, and the largest found is 2.5 per cent. I have compared with these sequences the weather of Washington, Williston, and Yuma. The interesting result comes out that both temperatures and barometric pressures in weather show opposite courses depending on whether they accompany and follow rising or falling solar radiation. This is shown for Washington weather in Figure 4. Apparently major changes in weather are caused by small fluctuations in the solar radiation.

If this is so, we ought to expect that the regular periodicities which are proved by Figure 2 to make up the principal solar changes since 1918 ought to be reflected in the weather. In Figure 5 one may see that this is indeed so. The principal changes in Washington

temperatures since 1918 are represented as the sum of six regular periodicities, of which five are those found in the solar radiation. This gives us hope that weather may be susceptible to long-range forecasting. It would, indeed, be a great boon if the characteristics of coming seasons and years could thus be approximately known in advance. But much further study must be made before this hope can be thoroughly tested.

We see from these exhibits that solar variation is of two types, the long-range and the short-range, respectively. Two kinds of causes probably are involved. The long periods of 68, 45, 25, 11,

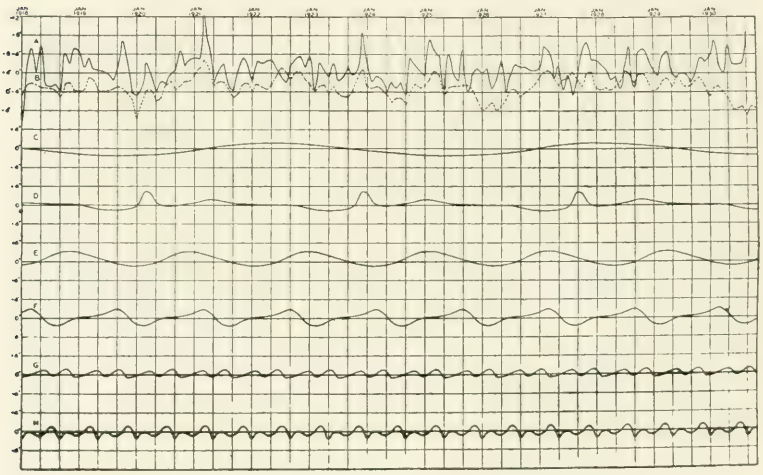

Fig. 5. Periodicities in Washington temperature associated with the periodicities in solar radiation shown in Fig. 2. Curves C, D, E, F, G, H represent periodicities of 68, 45, 25, 18, 11, and 8 months. Their sum in curve B roughly parallels the original curve A. These results indicate a real hope for long-range weather forecasting from solar-radiation observations.

and 8 months are closely related to the well-known interval of 11¼ years in which the numbers of sun spots wax and wane. This suggests that these longer-range periodicities are due to increasing and decreasing agitation in the gaseous fluid which composes the sun. It is to be regarded like the stirring of a fire with a poker, which brings up from below the hotter materials, and throws out temporarily a greater radiation in our rooms.

The short-period changes of solar radiation, which run their courses in a few days, are probably caused in other ways. We may suppose that patches of increased or diminished radiating power form occasionally on the solar surface. An example of this, indeed, is

often seen in the bright faculae which surround sun spots. On the other hand, there may be areas of diminished intensity above the sun spots due to the outrush of gases from within the sun and their consequent cooling by expansion as they reach elevations of diminished pressure. If in either of these ways local irregularities occur in the sun's surface brightness, the complete solar rotation which takes place in about four weeks must present these fluctuating intensities toward

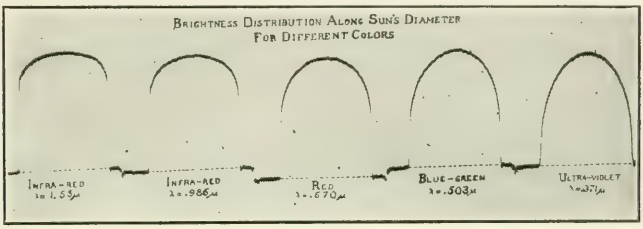

Fig. 6. Contrast of brightness between center and edge of the sun's disk as seen in different colors. From Smithsonian observations.

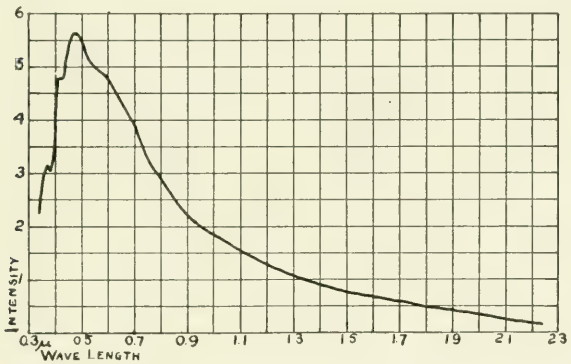

Fig. 7. Wave-length and intensity in the solar spectrum. Smithsonian observation.

the earth in their turns, and so produce short-interval variations of the solar constant of radiation.

There is another variation of solar radiation, not periodic, but exceptionally interesting to theorists, as it throws light on the sun's inner nature. I refer to the difference of brightness between the edge and the center of the solar disk. Figure 6 illustrates this observation and shows how different is the phenomenon when viewed in differently colored rays. In the ultra-violet, the sun's center appears about three times as bright as its edge, while in the infra-red the edge

is almost as bright as the center. A great deal of theoretical investigation has been based on exact measurements of these phenomena, which have been carried out in the years 1913 to 1920 by Smithsonian observers on Mount Wilson, California. This study is also

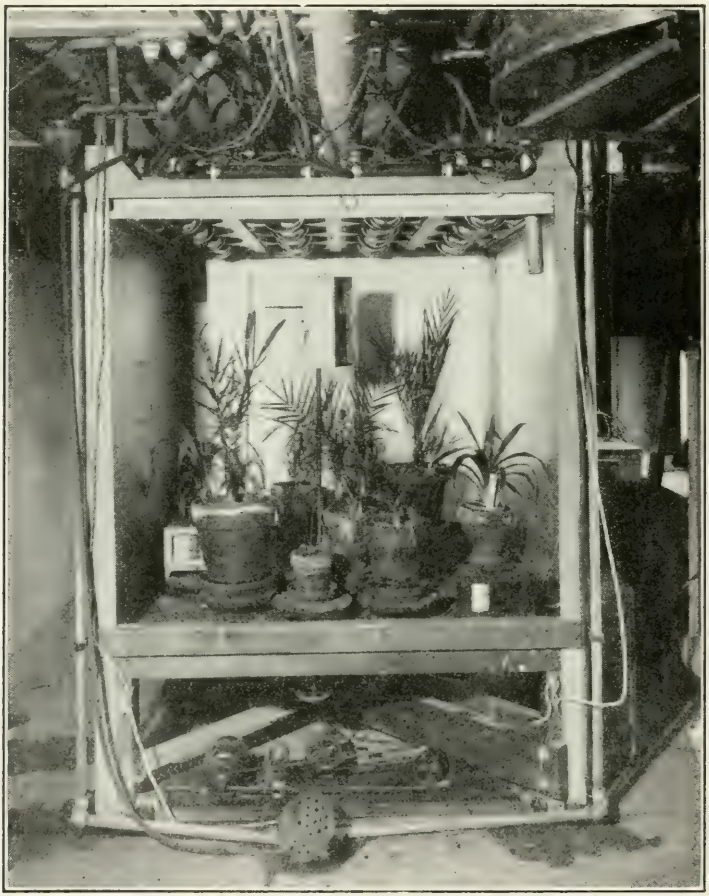

Fig. 8. Plants growing under controlled light, humidity, and temperature. Smithsonian Institution.

associated with the determination of the distribution of brightness as between different wave lengths in the solar spectrum. Smithsonian observers have determined this as shown by Figure 7.

The study of the dependence of plant growth on radiation has lately been taken up by the new Division of Radiation and Organisms

at the Smithsonian Institution at Washington. In order to have a better control of radiation intensity and hours of exposure than clouds and night would permit if solar rays alone were employed, we use mainly electrical lamps of special construction; the results will be applicable to the understanding of plant growth under natural conditions.

The essence of the problem lies in this, that plants grow by taking in carbonic-acid gas from the air through millions of little mouths called stomata which dot the under surfaces of the leaves. But this feeding occurs only when certain rays found in sunlight and other

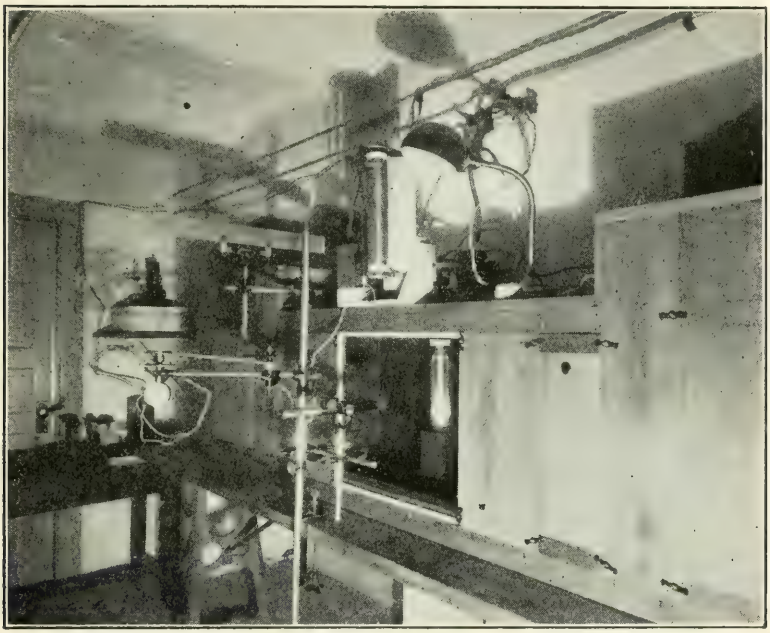

Fig. 9. Measuring phototropic bending of oat sprout. Smithsonian Institution.

sources shine upon the plants. The questions are: Which are the effective rays? What differences are created in plant growth when the rays are changed either in color, in intensity, or in time of exposure per day? What are the chemical processes which go on in the laboratories of the plant leaves by which cellulose, sugars, odoriferous materials, fruit and nut substances, poisons, and the host of organic chemicals which plants produce are built up? Finally, how does radiation cause plants to bend in those interesting ways illustrated by the sunflower and nasturtium, and by the twining stalks of the beans and peas?

All of these questions are being studied at the Smithsonian Institution. The investigation is still young, so that little as yet has been published. Figures 8, 9, and 10, however, give some idea of the ingenious apparatus and interesting work which have been developed already under the direction of F. S. Brackett. I will but mention the phototropic experiments in which a little oat sprout is being used as an indicator. It is situated between two lights of different colors, whose intensities may be graduated until the oat sprout grows ver-

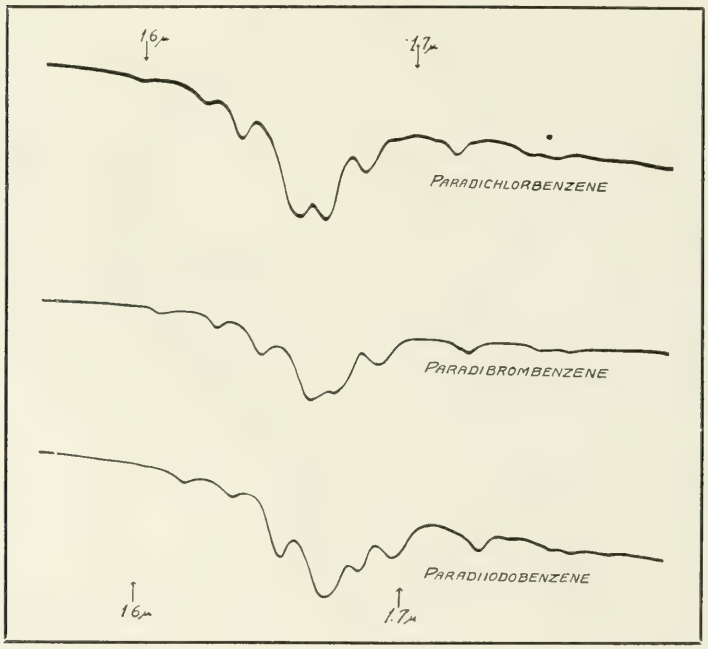

Fig. 10. Absorption spectra of benzene derivatives. Observed under the direction of Dr. F. S. Brackett, Smithsonian Institution.

tically. Then, of course, the two lights are equal in their tendencies to produce bending. It is found that green is a thousand times more active than yellow, and blue thirty times more active than green to produce bending. Red and infra-red are like darkness, having no bending influence at all.

Another very promising line of investigation is that illustrated in Figure 10. Pure organic chemicals such as benzene, chlorobenzene, and others of greater and greater complexity are introduced in a spectroscope between the source of light and the recording thermopile

which automatically measures the spectrum energy. Absorption effects are produced on the infra-red rays. These effects are found to be characteristic for each chemical studied. In this way we are building up a system of organic chemical analysis, whereby chemical structure can be determined without making combustions. It is yet

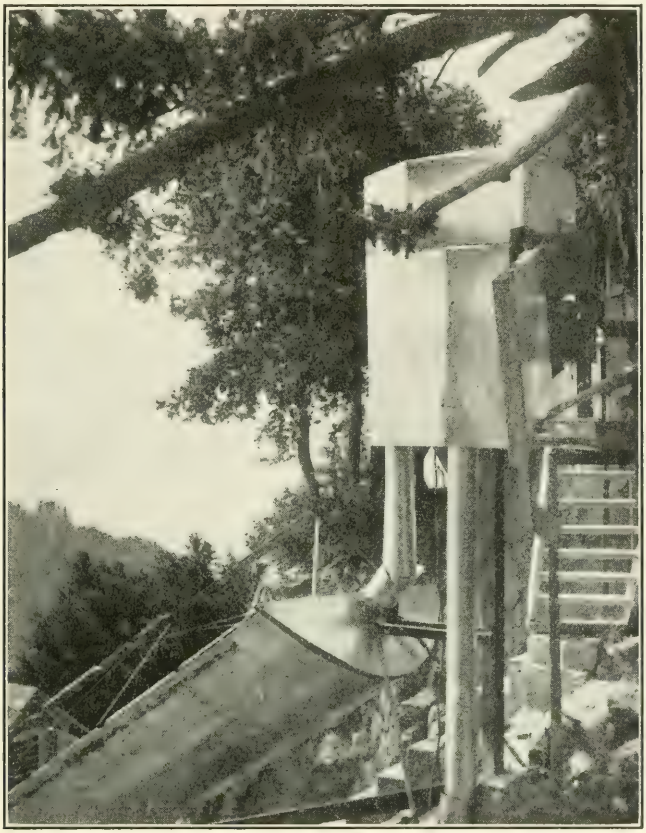

Fig. 11. Abbot's solar cooker on Mount Wilson, California.

uncertain how powerful this method will eventually prove, but we hope it will throw much light on the abstruse reactions of plant growth under the influence of radiation.

Figure 11 shows an experimental cooking plant which I erected at the Smithsonian station on Mount Wilson. Sun rays falling upon the great concave cylindric mirror, 7 feet by 12 feet in surface, and moved by clockwork to follow the sun, are reflected upon a blackened

brass tube incased by a vacuum-glass jacket. Within the tube, which lies parallel to the earth's axis, is high-test engine cylinder oil. It grows hot, expanding, and rises up into a reservoir containing about 60 gallons of oil. Two ovens for cooking are inserted in this reservoir of hot oil. A return tube from its bottom completes the circulatory system, bringing cooler oil to be heated by the mirror. For weeks at a time on Mount Wilson, the ovens remained hot enough to bake bread both day and night. All kinds of cooking except frying and broiling are readily done with this solar cooker. The kitchen where food is prepared remains cool, and the housewife has a delightful view of the mountains as she steps out to place it in the ovens. The apparatus is too costly to be anything but a luxury.

The most successful solar power installation thus far made was located near Cairo in Egypt, and was used to pump water from the Nile for irrigation. A description of it is given in the Smithsonian Report for 1915. The principle is the same as that just illustrated in the solar cooker, but vacuum jackets were not introduced to enhance the heating.

Chemistry and the Quest for Health

By OLIVER KAMM[3]

THE MEDICAL SCIENCES HAVE WON trench after trench in the war against disease, and man therefore has ample reason to feel encouraged with the progress made in his behalf. These gains, although but slight when viewed from the standpoint of what remains to be done for the relief of human suffering, bring enthusiasm to scientific workers and renewed hope to those seeking for life's most precious gift, good health.[4]

Sydenham, the English Hippocrates, once said that disease is nothing more than an effort on the part of nature to restore the health of the patient, and although there is an element of truth in his definition in its application to certain symptoms—witness the recent change in attitude toward the symptom of fever—nevertheless, it is not entirely satisfying to the patient. The dictionary definition, "disease is a departure from a state of health," also seems somewhat inadequate, and most of us may prefer the etymological derivation, *ease*, plus the privative prefix *dis*, thus indicating a lack

[3] Scientific Director, Parke, Davis and Company, Detroit.

[4] This lecture also forms part of a contribution to a symposium on drugs which will be published in book form in the near future under the auspices of the National Conference on Pharmaceutical Research (Williams and Wilkins, Baltimore, publishers).

of ease, a definition which is adequately broad in scope and which includes mental as well as physical "lack of ease," irrespective of whether it has been brought on by improper health habits, parasitism, or deficiencies due to heredity. We will here define the quest for health as the search for means and methods of relieving pain, combating disease and prolonging life, and viewed from this standpoint, it becomes one of the most important phases of human activity.

The remarkable contrast between ancient and modern medicine is indicative of the strides that man has taken in his efforts to make life longer and more livable. We have evidence, moreover, that man has hunted health from the beginning of time.

At first this search was little more rationalistic than the instinctive habits of animals; but slowly, by trial and error and by the accumulation of experience, the quest for health passed the witch-doctor stage and, with the assistance of modern scientific developments, it has become an increasingly exact science and has attracted an army of trail-blazers who no longer depend upon black magic.

Hunting health was dramatic when Alexander the Great, at the suggestion of his teacher, Aristotle, dispatched an expedition to the Island of Socotra in the Indian Ocean for aloes; it was still drama when Ponce de Leon sought the legendary Fountain of Youth in Florida; and it remains drama today when Noguchi dies in the field from yellow fever, and other scientists labor in jungle clinics in another world war, but this time a war upon tropical diseases. And the laboratory offers sacrifices, less dramatic but far more numerous.

With massive whale gun and sensitive probe, field glass and microscope, sword and scalpel, man has ventured to the far ends of the earth in search of secrets for the preservation and prolongation of life. He has gone down to the sea in ships and brought back cod-liver oil; he has dug into the bowels of the earth and extracted quicksilver; he has penetrated into the jungle and brought back the plant alkaloids; he has begun to harness the chemical messengers of his own body, the hormones of the ductless glands; and he has even discovered that important medicinal results can be procured from some of the component parts of light.

The quest for health has been an element of incalculable importance in the development of the human race. With the ape man it was not a disinclination to think, as with us, but rather an inability, yet the instinct and need for self-preservation continually prodded his brute brain to activity. In order to maintain life in the face of a cruel nature and to resist the aggression of other creatures he must needs develop two things, the ability to think and the ability to act

accordingly. Thus the experimental method of solving problems evolved slowly by pure necessity and with disastrous results to the vast numbers who failed to arrive at correct solutions. Finally, man emerged triumphant over other and larger creatures; he was able to rest, at least occasionally, in physical security but, alas, not always in bodily comfort because of his many aches and pains. Here was the beginning of the quest for health. Man had overcome many unfavorable natural phenomena and visible enemies, but with the evils of a more sedentary life and the handicap of his upright position (even his gregarious instinct, developed initially as a protective measure, became a curse) he was given no mental rest; he was called upon to fight mysterious invisible foes in the form of micro-organisms.

The quest for health and comfort was henceforth an important factor in stimulating man to keep mentally alive and to develop further his ability to think. He made progress to the extent that he combined thought with experimentation; without knowing it, he was laying foundations of medical science. Aeons must have passed without appreciable increases in knowledge of these sorts, but the necessity always remained to spur him on.

Prehistoric man unconsciously used, in a limited way, logical mental processes and thus thought, rather than fought, himself into survival. His efforts in formulating hypotheses resulted in the development of mythology, but sometimes he went beyond step one of the deductive process of reasoning for he observed and applied. For example, the savage early, and probably by accident, became familiar with the toxic nature of certain plants and thus learned to avoid them. Later, however, some prehistoric scientist in the tribe reasoned further and concluded that the toxic ingredient might be applied to the sharp edges of his weapons and thus transferred to his prey or his enemies in order to overcome them. And we know that he proved his theories to the satisfaction of others and procured the adoption of the process by his tribe. An extensive scientific search could scarcely improve upon the South American savage's adoption of curare for such purposes. No doubt a similar process led to the use of certain herbs by the medicine man of the tribe.

The art of medicine usually assumed to have started with Hippocrates in Greece in 500 B.C. was carried forward by Galen in Rome (200 A.D.) and was reborn four centuries ago with the development of anatomy, but this, the oldest of the medical sciences, could not cope with the problem of health single-handed in spite of such brilliant exponents as Vesalius, Harvey, Galvani, and Malpighi.

In the Dark Ages the alchemists had kept alive the flame of chemistry in their attempts to make gold, and the apothecaries dili-

gently provided their customers with the various mysterious medicines in use at that time as well as the popular poisons. At times the apothecary—the name being derived from the Latin designation for the custodian of herbs—practiced also as alchemist and physician.

With the sixteenth century came Paracelsus, a scientist of colorful personality who challenged authority and was always in trouble. As a physician he is credited with bringing on a reformation in the development of internal medicine, and as a chemist he is often spoken of as one of the "fathers." The name "Paracelsus" he himself devised to denote his superiority to Celsus. It was he who said: "Alchemy is not for making gold and silver; it is for making the supreme sciences and to direct them against disease and for human welfare."

Then occurred two isolated, important discoveries. Two hundred and fifty years ago the painstaking, delightful old Dutchman, Antony Leeuwenhoek, enthusiastically following his hobby, saw microbes under his homemade microscope, the first time that the world had spied upon these swimming bits of minute life. A century later, Jenner in England performed the first vaccination and eliminated the horrors of smallpox. Because the world was not yet ready for them, both these discoveries remained barren for another century.

The suggestions of Paracelsus finally bore sound fruit, and chemistry gradually developed in conjunction with pharmacy until the beginning of the nineteenth century when the newer science was able to shift for itself. Under the leadership of the former apothecary apprentice, Liebig, there was founded in the little city of Giessen, the most famous chemical school of all time, and here were laid the foundations of medicinal chemistry.

By 1850 many scientific discoveries had accumulated in the medical field and yet, because the bacterial nature of disease was not understood, suffering humanity derived few benefits. An individual with a dominating mind, able to correlate isolated facts, was needed in order to lead the way; he was found in the person of the chemistry professor, Louis Pasteur, who proceeded to apply to the elucidation of biological and medical problems the exact methods of physical and chemical research. His achievements are so well known to a chemical audience of this kind that it is unnecessary to dwell upon the details of his work.

When man inherited the earth he came into possession also of a bewildering array of infectious diseases, so formidable a group that one must marvel that he succeeded in holding his supremacy. We

have already mentioned the main reasons for "lack of ease" or "dis-ease," and of these parasitism, including bacterial infections, is first; next come the unfavorable influences of our methods of living. We cannot clearly differentiate between these two, however, since they are so closely related, and we know that insufficient rest, excessive worry, and improper nutrition all lower our resistance and dispose us to infections. The great majority of persons would enjoy health and live to an advanced old age were it not for the invasion of their bodies by pathogenic micro-organisms.

The bacteriologist prefers to classify disease according to the kinds of organisms that produce it; the physiologist and pathologist, according to the disturbed functions; and the physician, according to the manifestations which enable him to recognize and treat it. The worker in drugs looks at these diseases from the standpoint of what is being done for their alleviation; that is the classification presented.

GROUP I. DISEASES WHICH CAN BE CONTROLLED BY GENERAL PUBLIC-HEALTH MEASURES:

1. Cholera
2. Plague
3. Tuberculosis
4. Typhoid fever
5. Typhus fever
6. Yellow fever
7. Infantile enteritis
8. Miscellaneous diseases

GROUP II. DISEASES WHICH CAN BE CONTROLLED BY THE USE OF DRUGS EITHER BY PROPHYLAXIS OR BY DIRECT TREATMENT:

1. Diphtheria
2. Smallpox
3. Typhoid fever
4. Syphilis
5. Rabies
6. Tetanus
7. Ankylostomiasis (Hookworm disease)

GROUP III. DISEASES WHICH ARE PARTIALLY CONTROLLED BY DRUGS, ALTHOUGH HERE THE RESULTS HAVE NOT BEEN AS SPECTACULAR AS IN GROUP II:

1. Pneumonia
2. Scarlet fever
3. Malaria
4. Gonorrhea
5. Leprosy
6. Trypanosomiasis
   1) African sleeping sickness
   2) Kala azar
   3) Yaws, etc.
7. Fungus infections

GROUP IV. DISEASES FOR WHICH WE HAVE AS YET INADEQUATE PREVENTIVES OR CURES, ALTHOUGH SYMPTOMATIC TREATMENT WITH DRUGS IS OFTEN OF GREAT VALUE IN BUILDING UP NATURAL RESISTANCE TO INFECTION AND IN GIVING RELIEF:

1. Influenza and the "common cold"
2. Rheumatic fever and arthritis
3. Miscellaneous bacterial infections:
   1) General septicaemia (blood poisoning)
   2) Localized infections:
      (a) Endocarditis
      (b) Puerperal fever
      (c) Pyelitis and Cystitis
      (d) Appendicitis
      (e) Erysipelas, etc.
4. Meningitis (Meningococcus infection)
5. Dementia praecox catatonia, epilepsy, etc.
6. Diseases of childhood:
   1) Measles
   2) Mumps
   3) Whooping cough
   4) Chicken pox
   5) Septic sore throat
7. Recently recognized diseases:
   1) Encephalitis lethargica
   2) Undulant fever (U. S.)
   3) Tularemia
   4) Poliomyelitis
   5) Oroya fever
   6) Psittacosis (Parrot fever)

GROUP V. DISEASES OF MIDDLE AGE, FOR WHICH TREATMENT WITH DRUGS IS MAINLY PALLIATIVE BUT USUALLY OF GREAT VALUE IN PROLONGING LIFE:

1. "Heart disease"
2. Circulatory diseases
3. Liver disorders
4. Nephritis
5. Cancer (*See also* Group VI, 2)

GROUP VI. GROWTH DISTURBANCES. IN SEVERAL OF THESE REPLACEMENT THERAPY HAS YIELDED SPECTACULAR RESULTS AS IN THE TREATMENT OF HYPOTHYROIDISM, DIABETES, VITAMIN DEFICIENCIES, AND MOST RECENTLY IN PERNICIOUS ANAEMIA:

1. Endocrine-Gland disturbances:
   1) Anterior pituitary
   2) Posterior pituitary
   3) Thyroid
   4) Parathyroid
   5) Suprarenal
   6) Pancreas
   7) Ovary and Corpus luteum
2. Protein sensitizations
3. Pernicious anaemia
4. Disturbed Cell Growth:
   1) Cancer (Sarcoma, epithelioma, and carcinoma)
   2) Benign tumors
   3) Gastric and duodenal ulcers
5. Nutritional Diseases:
   1) Vitamin deficiency causing such diseases as rickets, pellagra, scurvy, beriberi, etc.
   2) Anaemia (secondary)
   3) Food deficiencies

This list gives only a partial picture of the ills that flesh is heir to; moreover, it is only an abbreviated statement. The term "heart disease" is intended to cover an entire group of organic and of functional heart ailments, the former, as the name implies, being induced by infectious diseases. The term "endocrine disturbances" is an extensive specialty and treats of hypo- and hyperactivity of the entire series of ductless glands—thyroid, pituitary, ovarian, suprarenal, and the like. A single subdivision such as "disturbances of the thyroid gland" is a specialty of its own and treats such conditions as cretinism, myxedema, and exophthalmic goiter. This bird's-eye view of the situation serves to show that much remains to be done.

In mentioning the various diseases that afflict the human race we have made no attempt to single out the ones chiefly responsible for illness and death; these will now have our attention. Even during the short interval between 1900 and 1927 there has been a marked disturbance in the ranks of these "captains of death." Tuberculosis has been relegated from first to seventh place, but, on the other hand, cancer has advanced from position seven to two. Infantile enteritis has been displaced from the group by the menace of accidental deaths, one-fourth of which are owing to the automobile. The relative positions of these major causes of death are here presented, the figures representing the death rates per 100,000 population:

1900		1927	
1. Tuberculosis	220	1. Diseases of heart	225
2. Influenza and pneumonia	180	2. Cancer	107
3. Diarrhea and enteritis	139	3. Influenza and pneumonia	97
4. Diseases of heart	137	4. Cerebral hemorrhage	97
5. Nephritis	88	5. Nephritis	94
6. Cerebral hemorrhage	80	6. Accidents	80
7. Cancer	64	7. Tuberculosis	74

At the beginning of the twentieth century tuberculosis was the first of the captains of death. Today it is in a subordinate position, and we can expect further improvement; certainly, by 1950 it will no longer be a significant factor in the quest for health if the fashion for a boyish figure be replaced by a more sane one and girls can be induced to dress warmly and eat nourishing food. Five years ago the death rate from tuberculosis for girls of flapper age in cities was fifty per cent higher than for boys, while now it is almost one hundred per cent higher.

The situation in respect to cancer appears to be alarming, and we read much in the current news concerning the apparent increased susceptibility to this disease. There are other explanations, however, to account for the increase in cancer mortality. For example, more cases are actually recognized as cancer owing to better diagnostic methods; more people survive up to the cancer age than formerly, and since fewer people die young of the acute infections, there is more chance of their dying of the diseases of middle age.

As the infectious causes of death are gradually removed, people will be expected to die of senescence; and it is logical to expect that the most regular and hardest working units of the body, the heart and circulatory system, will prove to be the ones to become defective. There is considerable truth in the statement that "man is as old as his heart and arteries." The goal toward which we strive is to banish human ailments to such an extent that the majority of people will have the privilege of dying of old age, which usually means heart disease.

Heart disease is now first among the causes of death, and one out of every four or five persons can expect to succumb to it. The increasing death rate from this cause is illustrated in the table just given. Is it possible that with unexpected rapidity we have approached the ultimate and expected goal referred to in the preceding paragraph? The answer is No. The explanation of the apparent anomaly is that there are really two classes of heart disease, the one brought on by insidious, often chronic, infections coupled with abuse such as excessive athletics or overwork, and the other owing to weakening with age. It is the former which occasions serious thought since it ranks first in causing disability and invalidism. The increase in diseases of the heart and circulation is only partly accounted for by the fact that more people arrive at the older ages; present-day methods of living seem to favor the development of heart defects.

There is one captain of death, however, more dangerous than the rest because he is in disguise and slays indirectly. The dread social disease, syphilis, spread through Europe with surprising rapidity

soon after the year 1500. Fracastoro in 1546 published his classical and medically accurate description of the disease, but unfortunately he proved to be wrong in concluding that it would rapidly grow senile, become decadent, and be unable to propagate itself. At the present time it indirectly causes 15 per cent of all deaths since general paresis and some forms of circulatory and heart disease are of syphilitic origin; in fact, it can injure many other organs of the body in addition to the brain and heart. Although it does not so appear among the causes of death, Osler placed it at the head of the list.

We have now sketched the broad limits of the battlefield upon which this struggle for health is being waged and have appraised in no depreciating manner the strength of man's opponents. During the relatively short period between 1880 and 1930 the tide of battle has turned sharply and, although space has not permitted a discussion of the several triumphs, the classified table already presented shows the results of a surprising number of successful major combats. These accomplishments are reflected in a gratifying manner in the statistics dealing with the expectancy of human life.

Let us now consider briefly the strategy that science has used in fighting these enemies of human life and happiness. There are several methods of fighting disease just as there are various methods of combating other enemies. Actually the applied methods are four in number: first, we can prevent invasion by advance attack; second, we can make the invaded area uninhabitable; third, we can adopt the principle of passive resistance; and fourth, we can use the method of direct attack after invasion has taken place.

He is a poor general who limits himself to one form of strategy, and it can be said of the workers in medical science that they have sought to use effectively all four methods of attack. The first is the method of preventive medicine based upon sanitation; the second is also preventive in that it confers immunity by vaccination and other prophylactic treatment; the third depends upon the gradual spontaneous development of a natural resistance; and the fourth is the method of chemical warfare. A few examples will serve to illustrate these methods.

Sanitation can prevent invasion by what is really advance attack; this involves the purification of drinking water, the protection of food supplies, sewage disposal, and the destroying of intermediate hosts. The milk supply is protected by pasteurization, but we can and do strike even farther in advance by attempting to prevent the access of pathogenic bacteria to the milk by supervision, education, and examination of the handlers, and to a limited extent by insistence on their vaccination. The purification of water supplies has prevented

the spread of typhoid, cholera, and other intestinal infections; the destroying of mosquitoes has eliminated yellow fever and to some extent malaria, and maritime quarantine has contributed its aid in the control of the plague.

The human body is made uninhabitable for certain micro-organisms by vaccination as in the cases of smallpox, typhoid, diphtheria, and scarlet fever. In other instances science is still dependent mainly on passive resistance, as in influenza and pneumonia, or upon the spontaneous development of immunity, as in some of the infections of childhood.

Passive resistance, in a way, is also the method of eugenics, but unfortunately it is rather slow. In their great debate over the relative advantages of eugenics in comparison with medical treatment, Pearson states that "evolution helps man better than he at present knows how to help himself," but Dublin replies, "There is no room today for a jungle ethics in a civilized state." Both may be right.

The methods of preventive medicine have been the most productive in combating diseases up to the present time; in the future, however, the method of chemical warfare will become increasingly more important.

There are two types of drugs: those which are intended to remove or destroy by direct attack the cause of the disease, and those which are merely intended to ameliorate the symptoms, assist in healing the lesions, and hasten convalescence. To mention only a few of the specific types of drugs in daily use, we need merely recall the use of the anesthetic to produce unconsciousness, the analgesic to remove pain, the heart tonic to improve circulation, and the germicide to prevent contagion or reinfection.

As a bridge helps us over the roaring flood waters of a stream, so a reliable drug can assist us in passing safely over rough places in the quest for better health. But we do not care to travel on bridges all the time. Symptomatic drugs are often abused and can be actually harmful when they are used to hide the symptoms and thus prevent the recognition and proper treatment of the disease itself. The part played by the chemist in the quest for health can be illustrated best by a brief discussion of how remedial agents are developed through his efforts.

A philosopher suggested that human progress takes place in three stages: the *adoptive*, the *adaptive*, and the *creative*; and such a classification might well be applied in sketching the development of a remedial agent. First, we adopt the materials that nature has provided for our use; next, we seek to modify and purify the crude product, to adapt it for certain purposes; and, finally, with the aid

of synthetic chemistry, we seek to duplicate the natural product, to produce new derivatives of it, and to synthesize entirely new compounds after the chemical structure of the parent product has been determined.

Let us illustrate these processes of adoption, adaption, and creation by means of examples. A thousand years ago the natives of Kaffa, a province in Abyssinia, discovered the value of coffee as a stimulant and used it appropriately in dissipating drowsiness during prolonged religious services. This was a case of adoption of a natural product. In modern times pharmacists and chemists sought to concentrate the extract and to separate the specific substance responsible for the stimulating action, and in the year 1820 the pure compound was isolated and named caffeine. As a result the product was available in concentrated form, new modes of administration became possible, and it was combined with other drugs. This was the adaptive stage of progress. In 1895 caffeine was reproduced synthetically in the chemist's laboratory, and it was found possible to prepare synthetically certain related substances, known as purines, which are of even more interest as medicines. This presents the creative stage of progress.

The native of South America found that by chewing the leaves of the coca plant he obtained certain stimulating effects and was also enabled to avoid pangs of hunger owing, as we know today, to the paralysis of the terminals of the gustatory nerves. This is again a case of adoption. In 1860 chemical workers isolated the alkaloid, cocaine, and pharmacologists demonstrated its use for the production of local anesthesia; that is, they adapted the natural drug to new uses. Finally, in 1902, the creative phase was attained and the natural alkaloid reproduced in the laboratory; and in 1908 were made available purely synthetic local anesthetics which have no counterpart among natural products.

It is true that a considerable number of other successful remedial agents which now have a scientific basis were originally discovered and adopted by laymen. For example, cod-liver oil with its vitamin content; cinchona, adopted by Europeans after Countess Cinchona was relieved of her fever by the drug offered by her native servant; ipecac, which was disclosed by a supposed quack after the Dauphin of France had been cured of dysentery and the king had offered a thousand pieces of gold for the secret formula; digitalis, an old woman's remedy for dropsy but today recognized as our most valuable heart tonic; belladonna, so called because the Spanish Bella Donna herself found it appropriate for whitening the skin and for dilatation of the pupil of the eye; and the native American shrub, New Jersey tea, used by the soldiers in the American Revolution

not merely because the available supplies of good tea had been discarded in Boston Harbor, but also because they believed that it checked excessive bleeding from wounds (and now 150 years later we find that Jersey tea does contain a mild hemostatic). The Chinese drug "Ma Huang" (Horses' Wind) has been used in China for the treatment of asthmatic conditions for five thousand years, but only in 1924 was its use placed upon a scientific basis; now known as ephedrine, it has proved to be a medical sensation, and new uses have recently been found for it.

It should be remarked, however, that for every effective remedy found by the old adoptive methods, a hundred ineffective ones have also been foisted upon the sick and that many time-honored remedial agents have been forsaken during recent years because modern scientific research has been unable to prove that they had any positive value whatever.

Until recently, civilized communities as well as savage have been dependent on adoptive methods, but with the development of science the important natural products are rapidly being improved by adaptive procedures. The most important adaptive work, no doubt, is the development of the biological products such as serums, vaccines, and antitoxins, and the isolation of hormones and vitamins. Finally, as a result of the development of synthetical chemistry, at least a beginning has also been made in the direction of *creative* measures. The three stages of progress overlap; we are now nearing the end of the adoptive stage, in the very midst of the adaptive stage, and at the threshold of the creative stage.

The title of this lecture may have led you to expect an enthusiastic account of the triumphs of modern chemistry presented in the style that is so popular among rocking-chair chemists at the present time. My actual treatment of the subject may prove to be disappointing since I expect to stress the fact that chemistry, after all, has played a minor rôle in the modern drama on health conservation.

If I were required to list the individual achievements of chemistry in these directions in the order of their importance, I would be forced to place first the fact that it was possible for the great chemist, Pasteur, to desert the field in which he had been trained and become a medical scientist; second, I would mention the development of methods for water purification; and third, the invention of soap and the increasing tendency to use it liberally. It is questionable, however, whether modern chemistry has the right to claim much of the credit for those accomplishments. Fourth in the list of epoch-making achievements I would list the development of specific drugs for the

treatment of syphilis, and yet this outstanding chemical achievement, credited to the physician Ehrlich, however, has failed in checking the ravages of the disease as has been indicated in the preceding discussion. The chemist cannot be blamed, however, for the failure of his outstanding achievement in medicine; the blame must be placed at the door of sociology.

In attempting to counteract ever so slightly the harmful influences of modern chemical propagandists I may unconsciously adopt a pessimistic attitude which, of course, is in no sense justified. We should look forward to the limitless field of discovery which lies ahead and not delude ourselves into believing that chemistry has accomplished just about everything that is worth while accomplishing. Once upon a time the chemist was modest, perhaps too much so for the good of his profession, but he no longer can be accused of possessing such a virtue.

Scientists used to thrill with the hope of wresting from Nature some of her chemical secrets, but now it appears that Nature is taking her daily lessons from the chemist. Let me quote from one of the champions of popular chemistry:

> We shall not properly understand the world's literature until the teaching of English is transferred to the department of chemistry. . . . The history of the world will remain a riddle until we recognize the chemical factors in the course of events. . . . Wherein is modern civilization superior to ancient civilization and primitive barbarism? Because of the physical and intellectual advantages brought by chemistry. . . . Where did we get the alphabet? [From the chemists!] . . . The Phoenicians invented the alphabet because they needed it in their chemical business. Venice, the next great commercial power, also was founded on chemistry. . . . What was it that drew Columbus across the Atlantic? What was it that enticed Vasco da Gama to India around the Cape of Good Hope? What was it that sent Magellan around the world? [Chemistry, of course.] . . . The factors of heredity and the origin of species are merely chemical problems. The chemist will soon have power not only to control the course of life in the future, but he will be able to interpret the past. Neither time nor space can curtail the scope of chemistry. . . . In the future the chemist may gain control of life itself. . . . The dreams of the alchemists have been realized. . . . Metaphysics has a chemical foundation; astronomy likewise depends on chemistry; geometry is essentially a branch of chemistry![5]

If you are interested in more, I refer you to the *Journal of Industrial and Engineering Chemistry*, May, 1924. It is not surprising that some reaction resulted, and indeed many editorials have appeared

[5] Slosson, Edwin E. "The Expansion of Chemistry," *Journal of Industrial and Engineering Chemistry*, XVI (May, 1924), pp. 447–50.

on the other side of the subject. I will quote from a clipping taken from a small country-town newspaper:

> They tell us that soon the countryside will be good for nothing but scenery and that we shall feed upon proteins, sugar, and starch prepared in the laboratories at inconsiderable cost. Whether these proteins, starches, and sugars are to be eaten with a fork or a spoon we are not told by the chemist; but we do know that they will have to come out of the earth and it may be worth while to remind those who over-rate science and particularly chemistry, (and they are legion among the gentlemen who write) that the meanest growing plant converts chemicals into calories with fifty per cent greater efficiency than the most perfectly equipped scientific laboratory! . . . Science has made great progress and will continue to make much more, but as yet science knows nothing of creation. Its first function is to learn how nature works and to do team work with her, in which team nature compares to its yoke-fellow as a horse to a rabbit.

This impresses me as a keen analysis of the situation. As far as I know, it has never been specifically claimed that editorial writing is a subbranch of chemistry, but it is evident that this editor proved himself to be a fair scientist. If editorial writing is a branch of chemistry, and presumably it is, I move that this small-town editor be given his degree in chemistry.

Most of the chemical problems in relation to medicine are still unsolved, and therefore the field of work is full of possibilities. No one needs to regret that he did not live fifty years ago when each experiment which the chemist conducted in his laboratory constituted a discovery. The field may become increasingly difficult, specially trained men may be needed, but the benefits to humanity and the possible rewards to the individual are greater than ever. Even in this age of specialization and group effort, there is ample opportunity for the lone investigator, but the pen is not a substitute for hard laboratory work.

The gaps left in our knowledge of natural products are far greater than the advances already made, but I regret that I cannot discuss them in detail in the limited time at my disposal. Among the medicinally important plant alkaloids many are still imperfectly known chemically, and only a few of them have been synthesized; among another important group of natural products, the complex glucosides, of which those in digitalis are of greatest value in this age of heart troubles, little progress has been made chemically; the riddle of the enzymes is still unsolved, and the same can be said of toxins and antitoxins. Although thousands of workers are studying the hormones of the ductless glands, only a few have been isolated and only the two most simple ones have been produced by synthesis.

We are still groping in the dark in as far as our chemical knowledge of vitamins is concerned, although here we have one ray of light in the discovery of a relationship between the unsaturated alcohol, ergosterol, and vitamin D. Finally, much remains to be learned of the relationships between hemoglobin, chlorophyll, the bile-pigments, and cholesterol.

Most of our drugs, with the exception of the typical biological products which are not dependent upon the chemist, merely relieve certain symptoms and do not attack the disease itself. Specifics have been developed for a few of the trypanosome infections, but in the treatment of bacterial diseases we must still depend more upon nature than upon the chemist. Spontaneous recovery due to nature's tendency to produce immunizing substances still is our main reliance. Little is known concerning the relationships between chemical structure and physiological action, and the absence of known laws enabling one to predict and calculate the action of drugs is a great handicap; in these directions the chemist has much to learn in co-operation with other scientists.

The accomplishments of the medical sciences are reflected in the conservation of human life. The expectation of life during the Middle Ages and up to the time of the discovery of smallpox vaccination is variously estimated as from twenty to thirty years although, of course, no accurate statistics are available. At Geneva in the sixteenth century the life expectancy of an infant was twenty-one years; in the seventeenth century twenty-six years; in the eighteenth century thirty-four years; and the latter figure held also for Massachusetts in the year 1789. General statistics in the United States begin with 1900 and show a gratifying increase to forty-eight years, with a further advance from forty-eight to fifty-eight years during the interval 1900 and 1922, and to almost sixty years by 1928.

We wish here to avoid the common fallacy of failing to differentiate between the expectancy of life at birth and the normal span of life. The former refers to the average length of life, the latter to the expected ages of those who have safely reached maturity. Thus, the one who has reached age twenty can expect to live to beyond sixty-five: if he reaches age forty safely he can expect to see his sixty-eighth year, and the average man at fifty can expect merely to live to seventy. It is obvious that the biblical "three score and ten" still applies; the span of life has not changed radically.

The alarmist sometimes points out that although there has been a tremendous increase in life expectancy for infants and for children, there has actually been a slight decrease in life expectancy for those

at middle or advanced ages. His process of reasoning omits the recognition that many individuals with diminished vitality have had their lives extended to middle age. It is probable, however, that in so far as longevity is concerned, medical successes have been partly nullified by modern methods of living.

The principle of conservation and the development of efficiency is a part of the philosophy of American business, but it is yet to be applied to that most important business, the business of living. This could be accomplished partly by the extension of the human life cycle, but to an even greater extent by filling that life cycle with power and capacity to live more completely. Both objects can be attained simultaneously by improvements in health, and the present-day method is to reveal so-called silent sickness through periodic health examinations; these illnesses, which include the chronic organic maladies of heart, blood vessels, and kidneys, cause almost forty per cent of the death rate. Obviously here is a great opportunity for health conservation.

Regular physical examinations are valuable for the detection of curable defects or of incipient diseases, but of importance also is the fact that such examinations contribute to mental health by eliminating worry. However, the human race needs help not merely in the detection of latent disease; it requires also a new type of medical education in health habits, physical, psychological, and medical, in order to prevent even latent trouble. Great are the physician's opportunities for service, and just at the time when we hear most talk about the "age of specialists," we have most need for this new type of family physician and medical adviser. No doubt he is right here with us, and the trouble is in our failure to recognize him and to utilize his services.

Longevity seems to depend to a great extent on heredity, and Pearl's data indicate that persons who live long come from long-lived families; however, we should realize that what is actually inherited is a good type of bodily machine in which all the parts are of good materials and a mental equipment which prevents improper dissipation of this store of energy. It should be possible, therefore, for those born under less auspicious conditions to make up partly for the inherited deficiencies by proper methods of living; but modern way of living has a tendency to make them neglect such measures until it is too late.

"Old age" is not a matter of years. Each individual really has two series of birthdays, since everyone possesses a chronological age and in addition a medical age, and the two do not necessarily coincide. Sometimes, and pathetically so, an individual passes several "medical"

birthdays in a given chronological year, and then again, particularly during the years of youth and middle age, he goes along merrily during several years without passing a single medical milestone.

These statements are illustrated graphically in Figure 1. The straight line A-E-F represents the hypothetical case in which the chronological and medical ages are identical. On the other hand, the curve A-B-C-D represents actual conditions more nearly cor-

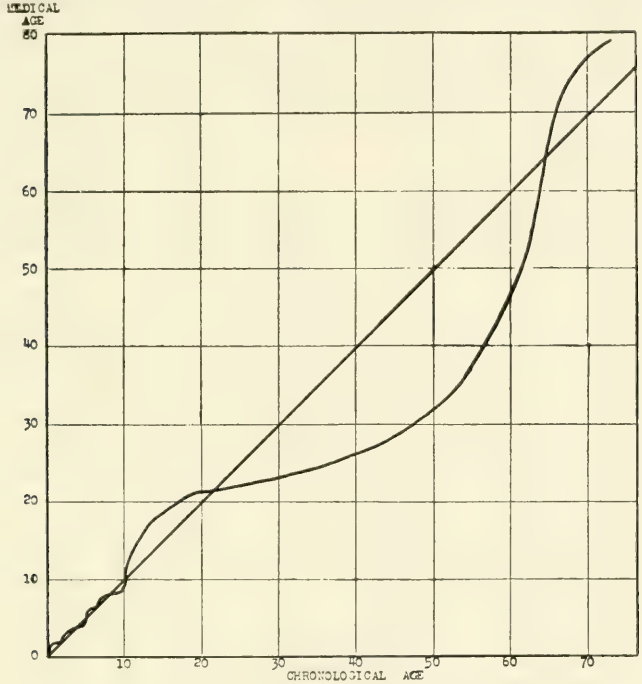

Fig. 1. The coincidence of chronological age and medical age.

rectly. We note some slight fluctuation during the years one to twelve due to the contagious diseases of childhood, but a child usually recovers rapidly and proceeds to age regularly. However, at the period thirteen to sixteen there is more rapid maturing due to the oncome of adolescence, and subsequently there is observed a very remarkable period between twenty and forty when one fails to realize that he is growing old. Subsequently, the individual tends to age rapidly; he experiences more and more difficulties in overcoming even minor ailments such as common colds; and the medical-age curve crosses the chronological-age curve at the age of fifty, sixty, or seventy according as the individual has lived his life.

Middle age is the dangerous age. The curves shown above give a suggestion as to why one is taken unawares; namely, because over the period between twenty and forty the medical age actually lags behind the chronological age, and it is as difficult to convince the individual who is sailing on this favorable sector of the curve to obey health rules as it is to prevent the gambler from pyramiding his profits. Many health organizations advise the individual concerning the importance, during this dangerous age, of properly controlled exercise, diet, mental hygiene, and periodic health examinations, but little has been accomplished as yet. Let us not forget that we can make use of the physician's services and advice even while we are well.

We are now in the midst of a modern crusade which, instead of spreading disease as did that of the Middle Ages inadvertently, has as its object the alleviation of human suffering. In this crusade we are no longer limited by insufficient help or by lack of facilities. The seeker for truth no longer works in garret or secret cave concealing his discoveries for fear of persecution from priest or king. This modern quest no longer depends upon a few brave pioneers, but rather consists of a mass attack over a wide front which knows no national boundaries, in which thousands of physicians and medical scientists are engaged. At strategic points groups of scientists have banded together in concerted attacks upon resistant barriers. The most stupendous attack is the campaign against tuberculosis under unified leadership by the National Tuberculosis Association. In this campaign alone we find united several governmental bureaus and national organizations, three medical research institutes, ten university departments, and two industrial laboratories. And now, in addition, we have the authorization by law of the National Institute of Health which will develop into a mammoth organization with boundless opportunities for benefiting the human race. But, as ever, there is no lack of opportunity for the private research worker, and spectacular individual advances will continue to be made by the volunteer.

The quest for health has quickened its pace. Since the turn of the century progress has been rapid. Several of the most serious infectious diseases have been brought under control, vitamins have been discovered, hormones have been isolated from the ductless glands, and a worthy start has been made in synthetic medicinal chemistry.

Mankind is advancing. Aristotle has returned, not as a single genius with his thousand scientific assistants supplied by royal munificence, but in the form of tens of thousands of medical scientists

engaged in a common quest, aided by several hundred thousand physicians throughout the world prepared by training for philosophical and scientific inquiry into matters of health. The outlook is bright. Solid foundations have been laid and many a major combat won in this struggle for better health and longer life; and with each discovery the entire army can advance to hold securely, to develop, and to use the trophies won. The front of progress has as its outposts the tombstones of heroic men and women who have willingly faced and suffered death that others might live, scientists who have spent years in dangerous work in their laboratories or in jungle, mountain, or desert in order to seek the cause and cure for the diseases of man; all a part of the greatest of all crusades, the quest for health.

What May the College Expect in the Physical Sciences from the High-School Graduate?

A SYMPOSIUM

I. THE COLLEGE PHYSICIST

By R. L. EDWARDS[6]

THE PRESENT OCCASION IS PROPITIOUS for scientific education in Ohio, as it marks an attempt to establish more intimate co-operation between four groups of workers in fundamental science. Though the colleges must depend on the high schools to an ever increasing degree for the human material with which they work, it would seem that the importance of this co-operation has scarcely been realized, and different as are the methods of approach to physics and chemistry, the aims of these two sciences are similar, the discovery and elucidation of the structure and properties of matter.

The arrival of a new era is apparent from another point of view. The dependence of our modern civilization on the physical sciences has been so vital that leading physical scientists in their eagerness to contribute to the scientific advance have been inclined to neglect the equally important problem of teaching; perhaps chemists have been less culpable than physicists in this regard. It is then most gratifying to note the new interest in disseminating the hard-won knowledge. For what does it avail to accumulate vast stores of scientific information if we lack interpreters who can make this information interesting or intelligible to the average high-school or college student? To be sure it has been freely utilized by technologists in the devising of

[6] Miami University.

amazingly cunning and efficient machines, machines which may be operated by the man who has had no scientific training whatever. But this immense development on the scientific side without corresponding intellectual growth on the part of the average man is by no means an unmixed blessing, particularly in a democracy. The program is not one by which the powers of greed and superstition will be repressed. We have witnessed the charlatan accepting the tools of science, and his fortunes have been enhanced coincident with the scientific advance. Science also has furnished him with arguments only too plausible to those whose scientific training has been neglected. If the testimony of Gaston Means is trustworthy, astrology had an influence in forming our national policies not so many years ago. It is then most important that our citizens, including those who have no interest in technology, be given the best possible scientific instruction. They must be enabled to distinguish between pseudoscience and genuine science in the omnipresent advertisement; they must know how to evaluate quasiscientific claims, distinguishing between those goals which cannot be attained because of a conflict with established physical laws, and goals that have been impossible merely because of a lack of the required dexterity on the part of man.

The question we are discussing today, "What may the college teacher in the physical sciences expect from the high-school graduate?" resolves itself into "What should be emphasized in a first course in the physical sciences?" This question involves some baffling preliminary problems. What are the aims of courses in the physical sciences as distinguished from the aims of the sciences themselves? At least four major aims must be recognized: general cultural education, the utilization of science in contributing to a philosophical view of life, training of professional students in the scientific techniques, and training of teachers. Unfortunately, it is impossible for science teachers to reach anything like agreement concerning the relative importance of any of these aims in the organizing of their courses. Further, we cannot agree on what type of course best contributes to the student's cultural education, or to his professional training, or to his philosophical view of life; for example, those who would emphasize the value of cultural education would not agree on whether that aim is realized only by the development of sound scholarship, or whether the development of a glib facility in bandying with scientific terms is sufficient. Bad as these admissions are, the situation in science is certainly no worse than in other branches of knowledge. In common with other educators we suffer from a too precipitate growth in unassimilated and unorganized knowledge; and the free-elective system applied not only by students on what subjects

they will take, but also by instructors on what they will teach in a given course has only aggravated our ills from this source. The most pessimistic view has perhaps been expressed by the president of one of our famous universities, who has declared, "We do not know who should come to college, what we should teach those who come, or how to teach it to them."

Among the other preliminary problems, the facing of which our topic demands, is the securing of more effective co-operation between high-school and college science departments. The state scholarship examinations recently established hold out excellent promise as a start. Yet there are great difficulties to be overcome before co-operation can be made to function properly. A large, though decreasing, number of high-school teachers of the physical sciences have had no adequate training in these subjects. Though there are many excellent high-school teachers devoting their lives to this work, we cannot hope for a high general level of preparation as long as a wide disparity of opportunity exists between high-school teaching and industrial research, or even college teaching. It is obvious that inadequately prepared teachers cannot co-operate in science instruction however great their desire might be. One of the favorable effects of the present industrial depression will be an improvement in the level of scientific preparation of the high-school teacher, and this improvement will become more pronounced if the depression continues. With this advance we may expect the high schools to show increasing disinclination to accept dictation from the colleges, and this in itself will be an aid to the movement for co-operation. Full and complete co-operation can only exist when the co-operating groups meet together on a basis of equality.

The opinions expressed through the rest of my discussion will present the particular views of the physicist, and, though I believe in them strongly, I cannot be sure that they are anything more than the views of a single physicist. But, however strongly I may extol the values to be obtained from the study of physics, there is no implication that the values to be received from the study of chemistry are any less significant. These values are ably presented by my colleagues. I shall make no distinction between the high-school and the college elementary physics course other than to acknowledge the more comprehensive character of the latter. This is the view held in the Millikan, Gale, Edwards text, and seems to be in accord with Henry Morrison of Chicago, who declares that in general there is no difference between good high-school teaching and good college teaching. My conception of the *summum bonum* of the physics

course is the developing of the power of reflective thinking, the capacity for which is of the utmost value to the general student, the philosopher, the research worker, or the teacher. What is reflective thinking? I would agree with a recent philosophy text that "reflective thinking begins when there is some problem to be solved or difficulty to be met," but the author's illustration of reflective thinking is absurd, "as when following a strange road, a traveller comes to where it forks; he will have to do some reflective thinking then if he has never done any before." Reflective thinking is impossible when no applicable information or data are available. The traveler in the above case can only guess at the right fork, his guess being modified by a possible knowledge of the general direction of his destination, or by the relative degree of traveling which the two forks show. In reflective thinking, one sorts out the relevant from the irrelevant facts at his command and determines what additional data he needs to secure. Having obtained these data, he establishes a scale of relative importance, from which a satisfactory conclusion may be obtained if his facts and his analysis have been correct. When reflective thinking reaches its highest level and becomes quantitative, the complex ideas may be expressed concisely and exactly by means of functionality. Reflective thinking is then synonymous with analytical thinking. The senior year of the high school is not too early to begin teaching the physics student the use of this powerful method, though it must be done with the greatest caution. The student's mind can respond to a steady pull, but a succession of severe intellectual jolts completely destroys any interest he may have in a subject. In preparing his mind for the functional method of treatment of physical principles, the instructor must apply the method to a vast number of commonplace concepts, nor need he be surprised if he hears students comment that he has a mania for presenting simple familiar ideas in an unintelligible way. He must be on his guard for all sorts of pitfalls into which the beginning student may stumble; as, for example, cases where the variables on which the dependent variable depends are not themselves independent variables. To illustrate, when we find that the rate of heating of an electric current varies directly with the resistance of the conductor and with the square of the current and with nothing else, we may with a suitable choice of units state that the rate of heating will be equal to the product of these two factors. Assuming that Ohm's Law is applicable, we may at once obtain the statement that the rate of heating varies as the square of the applied potential and inversely as the resistance of the conductor. Apparently, then, the bewildered student can choose between two statements one of which says that

the heating effect varies *directly* with the resistance and the other says it varies *inversely* with the resistance. The student must then be shown that these abstractions can only be made when the other "variables" are maintained constant; that is, in the mentioned case the heating varies directly with the resistance when the current is constant as in the case of series circuits; and inversely as the resistance when the potential difference is maintained constant, as in parallel circuits. The student is then greatly interested in seeing how it works out experimentally, and this can be strikingly shown in a class demonstration by the use of two lamps of different power rating, that is, with lamps of different resistance. This general procedure is of the greatest importance; find what facts are relevant and either from theoretical considerations or by experiment determine the rôle they play, and then make the facts predict the result of an unfamiliar demonstration. Demonstrations so presented lack the charm of mystery, desire for which is too often encouraged by the instructor, but they carry a powerful intellectual reward for reflective thinking, and the stimulus for reflective thinking furnished by this method can scarcely be equaled in any other way.

The method here outlined is, of course, the method of pure science, and it demands heavy mathematical prerequisites, a combination commonly believed to decimate the enrollment in physics. We are assured, too, in the preface of a recent college physics textbook that non-technical students have no interest in pure science. The average student's supposed indifference or dislike for physics, especially mathematical physics, is often ascribed to the inherent difficulty of the subject. But were this explanation complete, student participation and interest in contests of whatever sort would approach the vanishing point. Would not a more correct statement be that there is in the physics course as ordinarily conducted too small a ratio of intellectual satisfaction to applied effort? The skillful handling of the functional method of teaching greatly increases the numerator of this ratio without a corresponding increase in the denominator. Indeed, a legitimate decrease in the amount of material attempted will actually decrease the integrated value of the applied effort below that demanded in the conventionally taught course. In brief, the student is entirely willing to devote a high degree of effort if he receives a correspondingly large intellectual return.

These beliefs are amply substantiated by the experience of the physics department of one of the Ohio schools where this method was adopted five years ago. The physics department at that time raised its mathematical prerequisites so greatly that the university administration feared that the department would be wrecked.

Since that time, with the plan in full operation, the enrollment has actually increased by 125 per cent. During the past three years the pre-enrollment, which includes all students except the new Freshmen, has been as large in physics as in any other science, and during that time a larger number of the institution's graduates have entered further work in physics than in any other line of graduate work.

Just what of the voluminous possible material should be included in the elementary course? The criterion here should undoubtedly be, "Is the material merely factual, or does it present relationships provocative of analysis, that is, of reflective thinking?" Before discarding factual matter per se, a long view ahead must be taken. Does it form an essential background for later important relationships? In particular there are a considerable number of important definitions that must be thoroughly mastered. But the unnecessary use of a rule-of-thumb is particularly objectionable. The use of such a rule for determining the direction of the magnetic field surrounding a conductor carrying a current is excellent, but many texts introduce additional rules of a similar sort for the determining of the polarity of an electromagnet, the direction of rotation of a motor, the flow of current in a generator, all of which involve memory processes as substitutes for thinking.

The student who enters physics courses at the present time has a vastly richer background of experience than was possessed by any of the older generation. I do not refer here to any experience he may have had in the making of radio sets involving few operations which he comprehended, but to his frequent observation of the effects of centrifugal force, of torques, of inertia, of velocities, especially instantaneous velocities, and accelerations. He has learned something of the law of continuity. He has experienced the Doppler effect, and seen the mirage. He has seen magnificent demonstrations of the rectilinear propagation of light by giant searchlights. While his concepts of these phenomena are not at all precise, the teacher's task in handling them is greatly simplified by reason of the fact that the ideas themselves are not new to the student. But great as these aids are in the introduction to the classical physics, I believe that little modern physics should be introduced into the elementary course. The introduction of much modern physics will only confuse the student and make him feel that he has no *terra firma* on which to stand, a result which I cannot appreciate, however desirable it seems to appear to some. For that matter, even in the older physics, I believe that good pedagogy justifies the temporary treatment of special cases as generalities. For example, in introducing quantitative ideas of refraction, I believe in teaching the elementary student that

the ratio of the sine of the angle of incidence to the sine of the angle of refraction is constant for two given media, which ratio we call the index of refraction of the medium assuming the first medium air. Show him only at a later time after he has learned its real significance that this ratio is not really constant for the two media, but that it depends on the color of light used, and still later, when considering double refraction, that in such cases the value for one of the rays depends still further on the angle which the incident ray makes with the optic axis of the crystal. The generalization serves its purpose in giving the student something definite to which he may cling while his functional concepts of the phenomenon are developing. Perhaps many teachers will regard this particular generalization of questionable value. I myself object to the generalization found in many elementary textbooks that the distance traversed in the case of accelerated motion is equal to the product of half the acceleration multiplied by the square of the time. It seems so much more natural to derive the general expression for distance traversed for the case of uniform acceleration, and then to obtain the various special cases from the general case. But we must all present special cases as generalizations in many instances or progress would be impossible. For example, we must treat a body's mass as a constant and as a function of the body only; on the other hand, we must not treat its weight as a property of the body only.

In conclusion, the following elements in physics should be emphasized, first those which stimulate critical thinking as contrasted to those demanding primarily memory processes, though a certain amount of memory work as in learning definitions is absolutely necessary; and, second, those elements which arouse permanent intellectual interests. Actually these elements are identical.

II. THE COLLEGE CHEMIST

By ROY I. GRADY[7]

In this discussion some facts gathered from the records of 994 persons who have been graduated from the College of Wooster will be presented; next, the opinions of some of our students regarding the value of high-school chemistry in their college work will be recounted, and finally I shall summarize what I, from my own experience, believe we have a right to expect from the high-school graduate.

During the past seven years 994 persons have been graduated from the College of Wooster. These students came from all parts

[7] College of Wooster.

of the state and from every state in the United States. It seemed to me it would be of interest to ascertain if a course in high-school chemistry had any influence in determining whether the graduate continued the study of chemistry in college, and also whether it had any effect upon the quality of work done in college. It was found that 531, or 53 per cent, of the 994 graduates had chemistry in high school. Sixty-four per cent of those who had chemistry in high school took at least one year of chemistry in college, while 47 per cent of the graduates did not have chemistry in high school. Of those who did not have chemistry in high school 58 per cent took at least one year of chemistry in college. This shows a somewhat larger percentage; the difference between 64 per cent and 58 per cent of those who had chemistry in high school continued the subject in college. Whether this difference is large enough to be significant or not I do not know.

A comparison of the index numbers of these students is of interest. In calculating the index number, an "A" counts 3, a "B" counts 2, and a "C" counts 1, a "D" has no value and does not count toward a major. Thus if a student had 4 credits of "A" and 4 credits of "B" in a subject his index number in that subject would be 2.5.

Index numbers for the entire college course:	
Of those who had chemistry in high school	1.64
Of those who had no chemistry in high school	1.59
Of those who took chemistry in college	1.62
Of those who took no chemistry in college	1.60
Index number in college chemistry alone:	
Of all students, including the chemistry majors	1.44
Of those who had chemistry in high school exclusive of the chemistry majors	1.39
Of those who had no chemistry in high school exclusive of the chemistry majors	1.35
Of the chemistry majors who had chemistry in high school	1.77
Of the chemistry majors who had no chemistry in high school	1.78

These figures seem to indicate that high-school chemistry does not have very much influence upon the mark the student makes in his college chemistry, either in his first year's work or in his major.

It occurred to us that the student who has had chemistry in high school and who is continuing the subject in college should be able to give some valuable information regarding the merits of high-school chemistry if he were willing to do so. We asked approximately 150 students to tell us of what value high-school chemistry had been to them. If the courses had been helpful we asked them to be specific and tell us in what ways; likewise, we asked for specific objections. In order that the students would feel perfectly free to give us their

honest impressions, we told them it was not necessary for them to sign their names to the papers they wrote.

Many of the students were enthusiastic about their high-school chemistry and wrote that it had been of real value to them. There were, however, almost as many students who felt their high-school courses had been of little value to them in their college work. I shall quote from some of the papers:

"High-school chemistry gave me an interest in the subject."
"It give me a foundation for college chemistry."
"It gave me an idea of what chemistry is about."
"I learned chemical vocabulary."
"I learned laboratory technique; our teacher gave us much drill."
"It taught me to be prepared; our teacher gave frequent tests."
"I got an understanding of some of the fundamentals, such as the structure of matter, molecules and their activity, and became familiar with some of the more common elements."
"I learned the scientific method." [This boy who came from one of the smaller schools in almost the next sentence wrote, "Our high school is the best in the state, our chemistry department is the best in the state, our chemistry course is better than most college chemistry courses, especially is it better than most first-year college courses." After reading this outburst, I was inclined to wonder if he really had learned the scientific method.]
"I did not learn much—very little theory."
"My high-school chemistry was too easy."
"We covered too much ground, none carefully."
"The work was too vague."
"No stress was placed upon mathematics."
"Not enough time was spent in drilling on fundamentals."
"I never have heard of atomic weights." "I never worked a problem."

A summary based upon students' opinions would indicate that in some schools the students became interested in chemistry; they got a few fundamental laws and theories; they learned some laboratory technique; they learned something of the scope and the vocabulary of chemistry, and they learned how to study. Many felt too much ground was covered, but not thoroughly; the work was too vague, did not tell the reason why; too much memory work of unrelated facts; not enough arithmetic, and the course was too easy.

These are the opinions of the students. You may think they are too immature to be good judges. Perhaps that is true. I have found, however, that they are about as keen and critical in their analyses as any group you will find, and ordinarily their findings are worth considering. One interesting thing about this student report is that those who claimed to have been benefited by high-school

chemistry in most cases said they had had a good teacher in chemistry, while those who got but little good from the course quite frequently explained the fact by saying they had had a poor teacher.

I think we will all agree that it is not the primary purpose of the high-school chemistry course to prepare for college chemistry. With this in mind let us consider some of the results which might be thought of as by-products of the high-school course and which will be of value in the college work. In the first place, we have a right to expect that the student will know how to read understandingly. I do not mean that he should be able to read so that someone else can understand what he is attempting. That would be asking too much. I do think, however, that he should be able to read so that he himself can get the meaning. As an illustration of what I mean, most problems in beginning chemistry are very simple. The great majority can be solved by the application of from fifth- to seventh-grade arithmetic. Most students find chemistry problems very difficult. They are not able to read the problem intelligently and determine what is given and what is desired. I am sure you are now thinking that that is the grade teacher's duty. I will agree this work should have been done in the grades, but if the grade teacher failed to do her duty does that justify the high-school teacher in doing likewise?

We can expect the high-school graduate to have added to his vocabulary some chemical terms. He should be made to realize that chemistry is an everyday subject, but that in order to understand it he must know the meaning of certain terms. The boy who has been raised on a farm has a tremendous advantage over the boy who has been raised in the city when it comes to the scientific study of agriculture. The country boy knows the meaning of so many terms which are entirely meaningless to the city boy. A course in high-school chemistry should give a similar advantage in the study of college chemistry.

We can expect the student to have a wholesome respect for chemistry. A high-school course should have impressed upon him the fact that chemistry is not an easy course and that it cannot be made easy. The student should realize that it is a subject into which he can put his best, and that he will be rewarded in proportion to what he puts into it. Too often when the student comes to college he has the impression that chemistry is a snap course. A good student wants to work and to learn. Although he may complain, he will have much more respect for the teacher who makes him work.

We can expect the student to be familiar with a few of the more fundamental laws and principles. He should be so familiar with a few, such as atomic theory, law of definite proportion, and so on, that

he can apply them to his everyday life. No matter what the purpose of high-school chemistry is, the student has not assimilated any chemistry unless he is familiar with some of the laws and theories.

We should like to have the student appreciate the importance of high scholarship, of doing his very best. We have but little difficulty in placing our majors in medical schools, in the industries, and in the graduate schools if they have done good work in college. If they have not done good work in college, we find it very hard to place them. The student should be impressed with the fact that college work is harder than high-school work and that high grades are much scarcer. More than 95 per cent of our students come from the middle and highest thirds of their classes in high school and more than 75 per cent of them come from the highest third of their classes in high school. If you will refer to the record you will observe that in spite of their high standings in high school, their records are not high in college. It should also be noted that the student's grade in chemistry is very much lower than his grade for the rest of his college course.

I do not wish to leave the impression that I think high-school chemistry is of no value as a preparation for college chemistry, for I think it is. I do believe, however, that it is unwise to section students merely upon the basis of whether they have or have not had chemistry in high school. Too many different types of courses which are called chemistry are presented to make that a safe proposition. I would much rather teach first-year college chemistry to a group of students who had no high-school chemistry than I would to a group which had a poor course in high school; on the other hand, I would much rather teach college chemistry to a group which had a good course in high-school chemistry than I would to a group which had no high-school chemistry. There is a greater difference between a good student and a poor one within either group than between the two groups. A good high-school chemistry teacher makes high-school chemistry worth while.

III. THE HIGH–SCHOOL PHYSICIST

By WALTER FRYE[8]

A Frenchman has made the statement, "All knowledge is open to him who comprehends his language." Especially is this true of the physical sciences. Sentences may be read with the proper inflection, words pronounced with the correct accent, yet if the fundamental meaning is not grasped, inaccuracy and failure result.

[8] Central High School, Akron.

English training, which requires but little reference to the dictionary, no accurate knowledge of the limiting power of suffixes and prefixes, no sharp differentiation between synonyms, is paving the way for a bewildered pupil in classes which require definite knowledge and accurate distinctions. Much grief is in store for the pupil who reads *cohesion* and vaguely thinks of adhesion, who interchanges *A. C.* and *D. C.* current, or who endeavors to reach an inductive conclusion by deduction. More emphasis should be placed on accurate expression of our thoughts and on the definite interpretation of thoughts expressed by others.

The college teacher has a right to expect that the high-school graduate have a sufficient knowledge of rhetoric and an adequate vocabulary pertaining to the physical sciences to pursue advance work in these subjects intelligently. The high-school graduate should be thoroughly versed in the fundamentals of arithmetic, algebra, and geometry. Candidates for the physical sciences certainly should be able to manipulate fractions, decimals, percentage and proportion, algebraic equations, simple geometry, and graphs.

The physical sciences present an excellent opportunity to develop a keen sense of observation. A good place to lay the foundation to observe is at the high-school lecture table. Students lacking the experience of following a demonstration cannot be expected to give a reasonable account of themselves further along the line, for they have not the training to follow closely allied sequences. The students with whom the high-school teachers work are of adolescent age, when the preceptions are most acute. Yet if the lecture or demonstration is not immediately followed by laboratory exercises, the ability to accomplish self-constructive work is lost. Consequently, the high-school teacher must strike a delicate balance between training in observation and independent thinking. It is not so much the quantity of subject-matter the student is able to consume, as it is the quality of the fundamentals. If he knows the explanation of the theory, the application in many fields will follow.

IV. THE HIGH-SCHOOL CHEMIST

By VERNON S. CULP[9]

In any discussion of the question, "What may the college teacher in the physical sciences expect from the high-school graduate?" we have two general groups of students to consider: the group that has had no chemistry or physics in the high school, and the

[9] West High School, Akron.

group that has had chemistry or physics or chemistry and physics. The first group we may assume has had biology, as the minimum science requirement in the high schools agrees with the minimum requirement for college entrance; that is, one year of a laboratory science, which may be biology, physics, or chemistry. One may infer that the college teacher of the physical sciences may expect little from this group. In the second group we find a great diversity. Some have had biology, chemistry, and physics; others, biology and physics; others, chemistry and physics; and many have had only chemistry or physics. This second group, the group which has at least had chemistry or physics, is the one with which we are primarily concerned. There is undoubtedly an advantage in having had courses in both physics and chemistry. The principles involved are almost identical, whether the subject is considered from the standpoint of physics or chemistry. This paper will deal in the main with chemistry.

What the college teacher may expect from our high-school graduates is primarily dependent on the aims and functions of the modern high school. This may be in direct contrast to the professionalism of the college sciences, to make and train chemists and physicists. In other words, the sciences of the high school are not college preparatory in the sense that they are a direct preparation for the professional courses. They must function in the lives of the large majority who will never study science in college.

Five to ten per cent of the high-school students take physics or chemistry. Ten to twenty-five per cent of these will go to college. Three or four per cent of those in each science will continue physics or chemistry in college, and one or two in every hundred will follow these fields as a profession. Some are in these classes because they are vitally interested in science; some are caught by the lure of the spectacular; and others are attracted by the spirit and enthusiasm of the teacher who teaches them to observe, test, experiment, draw conclusions, and patiently wait for further evidences substantiating these conclusions, and new applications for them.

Outlines of courses of study are often considered a sufficient index of what the high school should teach and what the college teacher may expect. Oxidation and reduction are topics suggested for study by high-school students. When we go in advanced research laboratories, we learn they are continually working with oxidation and reduction problems. How can anyone know what is expected? The topics of oxidation and reduction do not suggest what should be taught about them, how much, or how and why. The college teacher may expect the high-school graduate to have had a course

that does not need the college to add, as it were, a capsheaf. The high-school graduate has learned that chemistry deals with changes in composition, that these changes are quantitative, in which one or more substances disappear, one or more others of equal weight appear, and he understands simple related problems. The college teacher may expect him to know many relations of chemical phenomena to industry, the home, and his own life as he has learned them from direct contact, or readings from *Chemistry in Industry*, *Chemistry in Medicine*, Slosson's *Creative Chemistry*, the *Chemistry Leaflet*, and many other reliable popular books.

He may expect him to know the elements of the method of science. From familiar observations one goes to laws and underlying principles. Facts must first be observed with honesty and sincerity. All conclusions are subject to modification or even to elimination. He should expect him to see the correlation of chemistry with other sciences and their relation to our industrial and social economy. He may expect the graduate to have a fund of information about chemistry, and that the technicalities he remembers are perhaps due to their relation to chemical applications in interesting phenomena of his surroundings. He may expect him to know a little about the structure of matter, electrons, atoms, molecules, crystals. The high-school graduates who continue the physical sciences in college show good spirit and have a reasonable desire to work. Most of them have a real interest in science.

The college teacher may expect the high-school graduate to judge him in comparison with former teachers who have been an inspiration and help to him, who have guided him to an interest in chemistry which should stay with him throughout life, an integral part of his cultural education. Many a graduate continues the study of science for its contribution to the meaning of life. One may expect from the high-school graduate a fair degree of open-mindedness, sufficient patience to await results that can be confirmed, and a disinclination to jump at conclusions.

Finally, the college teacher may expect the high-school graduate to have acquired an increasing respect for, and an appreciation of, the contributions of the physical sciences to the advancement of civilization, the service of man in these accomplishments, and the relation of his own well-being and happiness to them. He is dependent in some way every minute of the day on the applications of scientific knowledge and discovery for the clothes he wears, the food he eats, whatever means of transportation he uses. He owes an allegiance of spirit and service to a further appreciation of men of science who have given freely the fruits of their lives for the benefit of mankind

and the alleviation of human suffering. Such attitudes and appreciations may function intellectually and emotionally in the lives of our youth during the period when ideals and aspirations assert themselves. A real appreciation of chemistry is perhaps the finest expectation the college teacher may have from any high-school graduate.

A Cross Section of Physics in the Various Types of High Schools

A SYMPOSIUM

I. PUPIL ADJUSTMENT

By O. C. MONTGOMERY[10]

ANY ATTEMPT TO DO JUSTICE to this topic would require an enormous amount of investigation in the different schools. Although this has been impossible for the present writer, still there are certain problems which are common to all teachers of high-school physics. It will be the purpose of this paper to mention some of these common problems, not with the idea that any of them will be solved, but with the hope that such a consideration will not be without profit.

We are confronted with the fact that we are living in a scientific age or, to be up to date, the "electronic age." Science and the application of science have been so widely applied to our everyday affairs in the last twenty-five years that great changes have taken place in our thinking, in philosophy, in education, in industry, and in religion. The study of physics and the research in its various branches have greatly influenced these changes. To give consideration to the teaching of physics in our high schools today, when so much emphasis is placed on the cost per pupil per year rather than on the mastery of the subject-matter, presents a problem. Textbooks present another set of problems, for with the tendency of authors to popularize and to make practical the teaching of physics we sometimes wonder where we are going. We have the problem of permanent equipment of suitable laboratories as well as of apparatus necessary for an elementary course, especially in our smaller schools. We have the problem of arranging schedules so that the student may secure the necessary time for laboratory work, which is essential if he is to come into first-hand contact with the great principles of physics. Since our physics rooms and laboratories are used for other purposes because of crowded conditions, it is next

[10] West High School, Columbus.

to impossible to get into the rooms to set up and arrange demonstration apparatus which is necessary to the interest, thinking, and understanding of the principles involved. There is the continual increase in subject-matter without any corresponding increase in teaching time. And to all these must be added the omnipresent problem, the difference and the range of the abilities of pupils electing physics.

The advent of the junior high school has brought its quota of considerations. Where all students entering the senior high have had three years in the junior high, they usually have had two years of science, one year of general science, and another year in biological science. Serious consideration of such duplication is imperative.

Problems arise from the purposes which different groups of students have who are taking physics. For some students physics is required, or optional with chemistry, in their chosen course of study; some students must take it as a prerequisite to their university course; a large number elect physics because of their interest in the subject.

We have found it necessary to organize and systematize our work in order to meet the increased demand upon our time. In many cases have we planned our work under the unit system, with contract work permitting the pupil to work at his own rate.

Because large numbers of boys and girls are staying in school, we get a large rather than a select group, a group many members of which have not mastered the fundamentals of an elementary education. When situations like this arise would it not be well for us to rearrange our old plans and provide for two courses: one that would offer to our pupils subject-matter with a laboratory course that would prepare them more specifically for colleges of engineering and technical schools, so worked out that it would include the necessary mathematics? The second course, opened to the others, would include demonstration and a minimum amount of laboratory work; it would be concerned with fundamentals and at the same time would give a close-up view of the materials in this rapidly growing age of science, not with the idea of training scientists, but to acquaint them with the laws of nature.

We physics teachers evidently have a great opportunity and responsibility to help our boys and girls in this rapidly moving age to acquire that habit of clear thinking, to learn to evaluate the importance of things so that they can better adjust themselves to their surroundings. As Newton Baker has pointed out, the oncoming generation will have problems to solve that are even greater than those at present. Education should train unprejudiced minds. The teaching of physics certainly has a contribution to make in doing this thing. May not our teaching of physics have for its objective, not only

understanding the laws of nature and the seeking after the truth, but in so doing to develop that tolerance for things in science, as well as for all natural and social phenomena which are about us.

II. THE PHYSICS CURRICULUM

By BENJAMIN F. SALISBURY[11]

This report briefly summarizes the findings of the physics curriculum committee operating under the direction of the research department of the Cleveland public schools. The problems confronting this committee were: to prepare a course of study, to assist in making a city-wide survey of science teaching, to set up an adequate testing program, and to prepare a standardized list of physics laboratory equipment.

The course of study is now in use in the Cleveland schools. It is inclusive in subject-matter and provides for a technical and general course for students with intelligence quotients above 110, and a technical and also a general course for students with intelligence quotients between 90 and 100. After these courses are used for the rest of the present school year, the physics teachers of the city will be requested to submit their opinions concerning the merits of the outline and suggestions for its improvement.

A city-wide survey of science teaching was made in June, 1930. The Iowa placement test was administered to 2,212 students in the 88 classes of physics. The findings are included in a bulletin prepared by the Research Department, Cleveland public schools. It is possible to mention them here only in the form of a brief summary. Girls when paired with boys of equal ability did not achieve as much. The percentage of girls in the total enrollment in natural science falls off rapidly as the upper grades advance. Of 24,603 natural-science pupils in Cleveland, 51 per cent were studying general science; 10 per cent, biology; 9 per cent, physics; and 10 per cent, chemistry. Of 2,212 students studying physics, 83 per cent were boys and 17 per cent were girls. Forty-three per cent of the students studying physics had I.Q.'s of 110 to 125, 47 per cent had I.Q.'s of 90 to 109, leaving only 10 per cent with I.Q.'s of less than 90. The ability-level of Cleveland pupils enrolled in chemistry and physics greatly exceeds the general ability-level for Cleveland pupils of similar grade or chronological age. In IX-B science 26 per cent had I.Q.'s of 110 to 125, 51 per cent had I.Q.'s between 90 to 109, and 23 per cent had I.Q.'s below 90, whereas in XI-B science

[11] Lincoln High School, Cleveland.

(largely physics) the distribution was 41 per cent with I.Q.'s of 110 to 125, 47 per cent of 90 to 109, and only 8 per cent below 90.

Sixty-two per cent of the physics pupils of Cleveland are studying the subject in Grade XI. There are 88 sections of physics at Cleveland averaging 25.1 pupils per section. Sixty-one per cent of the time is devoted to recitation, and 39 per cent is devoted to laboratory instruction.

These data indicate a need for a unified sequence of natural science from Grades IX to XII, inclusive, with a better adjustment of courses to the ability and interests of the pupils. There is evident among many physics teachers a feeling of dissatisfaction in teaching physics by the use of conventional assignments of pages or paragraphs from standard high-school texts. Several experimental projects are being conducted by Cleveland physics teachers in which they are using new methods of instruction. Believing that complacency is a serious handicap to effective teaching of science, I feel that there should be many curriculum committees and many experiments in science conducted by the science teachers of Ohio.

III. THE DEMONSTRATION EXPERIMENT

By THOMAS D. GRAHAM[12]

Physics at Delaware High School is open to members of the senior class. In our school of about five hundred pupils, there is one physics class for about forty students. We have been confronted with two major problems in our physics work. The first problem arose from the size of the class. For one who has grown up with the idea that a laboratory course must consist of the individual performance of experiments, followed by a detailed report of the theory involved, the materials used, the method of procedure, data, and conclusions, this problem must assume some proportions, and especially in a laboratory which will barely seat forty pupils, to say nothing of furnishing materials for individual work. For a time the pupils worked in groups as small as possible with the apparatus available, groups of four or five being necessary. This, of course, was unsatisfactory, for at least three of the five must be comparatively idle, and that has two unfortunate angles. First, an idle boy in a laboratory will probably learn little, and second, it is a fortunate teacher who can have a boy at once idle and out of mischief. Our second major problem arose from the fact that in Delaware we work on the hour-period schedule. There are two

[12] Delaware High School.

chief features to this problem. In the first place, we use a laboratory guide in which the experiments are designed for performance in a double-period laboratory section; in the second place, one period seems scarcely long enough for a pupil to get familiar with an entirely new set of apparatus, execute an experiment, record data, and write up an experiment.

So much for our problems. Now, briefly, what have we done about them? Our schedule calls for five one-hour periods per week to be divided between recitation and laboratory at the option of the instructor. Although we have a schedule of days for recitation and days for laboratory, we honor it at times by disregarding it when a variation in plan seems more practical. We believe there is more virtue in demonstrating than in preaching physics; so we try to emphasize the demonstration, and minimize the mere recitation.

Working on a suggestion of Mr. Curtis, of the University of Michigan, we have tried a plan which seems to us a possible solution of what may be the two major problems of high-school physics, large classes and shortened laboratory periods. That is the demonstration experiment, a time-saver, a guide to those who with difficulty follow a procedure, and a unifying feature, since the class is always together. With two students performing an experiment on a demonstration table, and others recording data on the blackboard and making diagrams to clarify and explain various parts of the experiment, we have found our most successful method of conducting laboratory classes. It is at times desirable to alter the procedure from the directions in the guide to meet the needs of materials available and variation in presentation. Emphasis is placed not so much on detailed reports of procedure and data as upon mastery of the principles involved, and conclusions to be drawn.

IV. PHYSICS IN THE SMALL SCHOOL

By H. R. FISHER[13]

SINCE THE MAJOR PART OF THIS PAPER will concern the Sunbury High School, it will be well to get a bird's-eye view of this school as a working background. It has an enrollment of about 125 which includes Grades IX to XII. There are six teachers, including the superintendent. The science section of the curriculum includes general science, biology, chemistry, and physics. These are all taught in a room which serves as combined recitation room and laboratory.

The laboratory is well furnished with combination desks and

[13] Sunbury High School.

modern wall cabinets. By judicious buying and the use of good homemade apparatus, the stock of physics equipment is being built up. The homemade equipment includes force boards, wire boards, inclined planes, model motors, a lantern stand, and a lamp board. The purchased equipment is of the best and represents an outlay of about $700 which is fairly well distributed among apparatus for every branch of physics.

The physics class is largely composed of Seniors. This is to be expected since general science is for the Freshmen, biology is considered a sophomore subject, and chemistry is scheduled for Juniors. One of the unexplained peculiarities is the fact that few girls are enrolled in physics. They are not discouraged from taking it; indeed, there are no prerequisites set up. The average physics student has had one year of algebra and one of plane geometry. This seems to give an excellent background for the science.

In schedule-making the needs of science are given due consideration, mainly because the physics instructor is also the principal, and the superintendent is very favorable to a strong science department. The class recites three periods a week and works in the laboratory during two double periods. This is not a rigid schedule, but is varied in order that class work and laboratory work be kept absolutely together. The class works in sections of three. Reports are turned in each week and marked, but they are not returned until the end of the six-weeks period. As far as equipment allows, an even front is maintained with the experiments always closely following the current class discussion.

Informality marks all class discussion, the principle idea being to put physics across and to make it so clear that even the poorest in the class will get the idea. To this end a stereopticon lantern is used, and most of the slides are homemade ones used to explain various theories, machine actions, and apparatus. Actual machines, as far as possible, are studied in the laboratory, for it seems that one of the major reasons for studying physics is to explain the action of the common and everyday things about us.

This is, in brief, the method of teaching physics at Sunbury, but this discussion would not be complete without something about the problems faced by the smaller schools whose enrollments range from 40 to 75. Briefly, their troubles might be enumerated as follows: First, crowded schedules cut down the time that can be given to laboratory and class work, because of the large number of courses that must be offered and due to the small number of teachers. Second, this situation means that a diversity of subjects must be taught by each teacher. There is no such thing as departmental-

izing the school. Third, the science teacher is quite often the superintendent with all the duties devolving on that office. To complicate matters further, he quite often is the athletic coach, and the work requires much of the time that should be given to laboratory preparation and the like. Fourth, in these schools physics is usually given on alternate years, which means that classes are too large to be handled in the limited space of the laboratory and with the amount of apparatus available. Fifth, there is too little equipment in the laboratory. The principal reason for this condition is a lack of money. Boards of education may be quite willing to buy apparatus, but there is no money to pay for it. This condition will exist even in schools receiving state aid. Sixth, there is the rare case where science is not well thought of by the superintendent with the result that appropriations for the work are few and far between.

What is the solution of the problem? Is the student from the crossroads school to be discriminated against because he does not have the scientific background of the student from the best-equipped school? Is there something fundamentally wrong with our small country high schools? It seems there is something wrong. There are too many of them, and there will be no improvement until many of our small schools unite to form larger units with more students, more teachers, and more financial backing.

Objective Examinations in Chemistry

By K. M. PERSING[14]

At the present time considerable attention is being given to both intelligence tests and achievement tests. The latter are frequently referred to as "new type" or "objective" tests to distinguish them more definitely from the traditional examinations which seem to have fallen into disrepute as a measuring device in educational work. The results of the research conducted in both elementary and secondary schools have yielded some valuable testing devices, and have developed techniques which make possible the construction and standardizing of much more reliable measuring instruments for use in practically every phase of the educational program. The tests used in the high-school work are generally of two kinds, the standardized and the unstandardized. Of these two types of tests the unstandardized tests are more adaptable to local conditions since they are in general constructed by the teacher or a committee of

[14] Glenville High School, Cleveland.

teachers, and while they possess a greater degree of flexibility or adaptability they have a more limited useful value because they lack the refinements of standardization.

The uses that are being made of test results in the educational program have increased greatly because of the increased reliability of the tests, and the willingness of administrators and supervisors to accept these results as an objective basis for grouping, classifying, and diagnosing difficulties, as well as a basis of checking efficiency of teaching and in research. With this increased tendency to use the test results for purposes other than awarding credits, the problem of test selection has become more perplexing, and in order that suitable tests may be selected it has been necessary to apply certain criteria in judging the value of a test. The criteria used for this purpose in general are the following: the test must be valid, reliable, objective, and easy to administer; its results must be easily interpreted; similar duplicate forms must be available; it must be mechanically good, have diagnostic value, and be of suitable length.

Progress in the construction and use of objective tests in chemistry has been slow. It is difficult to understand why chemistry teachers continue to use unscientific subjective methods of measuring their results when more scientific methods and tools are available for this purpose. This condition may be due to extreme conservativeness on the part of the teacher, a lack of appreciation of the value of these tests, or to curricular difficulties. Then, too, the chemistry teacher, because he is a trained scientist, may have a feeling of smug complacency that he is doing a scientific job in spite of the fact that he is extremely unscientific in his methods of evaluating the outcomes of his work. There has been a feeling of contempt among both high-school and college teachers of chemistry for the science of education. Knowledge of chemistry does not make a chemical engineer, nor does chemical knowledge make a good chemistry teacher.

Among the list of chemistry tests now available in published form, the latest one to be added to this list is the Persing Laboratory Chemistry Test, a test for measuring laboratory techniques and skills. The test is in two forms, each form consisting of sixty-nine items, and illustrated with diagrams of apparatus. The test represents an attempt to build up situations resembling laboratory conditions.

In conclusion it may be pointed out that in the field of science, especially in chemistry, there is an unlimited opportunity to exploit the advantages of objective measuring, and the teachers of science should be leaders in construction and refinement of objective tests. This is true to a greater degree today than in the past because of the research contributions which have been made by the specialists.

TEST QUESTIONS[15]

1. A student working in the laboratory read the following directions: "Filter the mixture and add ammonium hydroxide to the filtrate." The drawing in Figure 1 shows the filtering process. Indicate the filtrate by writing the word, "Filtrate," on the proper dotted line extending from the drawing.

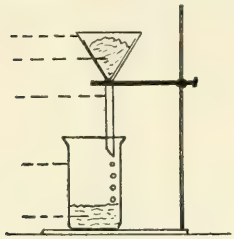

Fig. 1

4. The drawing in Figure 2 represents a part of the apparatus required for the laboratory preparation and collection of ammonia gas. The apparatus, which contains the proper materials, as you will notice, does not contain a delivery tube. You will complete the apparatus by drawing a delivery tube in Figure 2, extending from the point *X* to the proper bottle for the collection of the ammonia gas.

7. The properties of ammonia which make its collection necessary as indicated in the drawing in Figure 2 are:

a. . . . . .

b. . . . . .

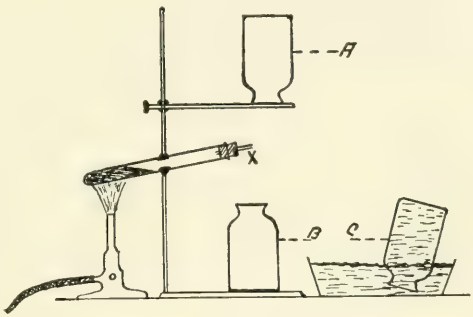

Fig. 2

44. It is not unusual to encounter certain difficulties in laboratory work. A student was trying to prepare hydrogen, as shown in Figure 3, but after working for some time was unable to collect any hydrogen though a vigorous reaction seemed to be taking place in the generator. What was wrong? Study the problem carefully. Gas was not collected in bottle *B* because. . . . . .

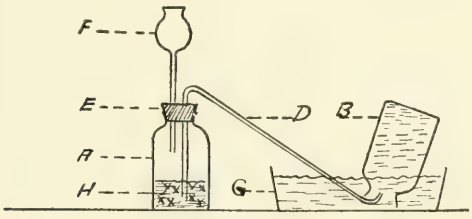

Fig. 3

63. The illustration in Figure 4 shows apparatus which may be used in the electrolysis of a solution of sodium chloride. In "Tube *A*," . . . . . will collect, while. . . . . will collect in "Tube *B*."

[15] "Testing Laboratory Technic in High-School Chemistry." Reprinted from *Journal of Chemical Education*, VI (July, 1929), p. 1323. We are also indebted to the *Journal of Chemical Education* for the use of the cuts which illustrate this reprint.

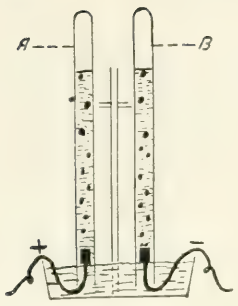

Fig. 4

64. The electrolysis of brine, as shown in Figure 4, is continued until the sodium chloride is entirely decomposed. The solution remaining in dish *C* will then contain.....

65. The apparatus in Figure 17 may be used for electrolysis of water by acidifying the water with sulfuric acid. The gas collecting in "Tube *A*" will be.....and that collecting in "Tube *B*" will be.....

A summary of the results obtained from the use of this test does not warrant definite conclusions. It is true that a study of the test results indicates some interesting tendencies, and encourages one to believe that it may be possible to measure with some degree of accuracy the laboratory technique as a product of the laboratory practice. The extent to which such objective measurement will be possible will require further investigation.

The Week-Day School of Religion

By EDWARD R. BARTLETT[1]

EVEN THOUGH A PRODUCT of the present century, the week-day school of religion has developed certain distinguishing characteristics, some of which mark it as unusual among the agencies for religious development. It is an institution, financed and directed by churches, singly or in groups, as a phase of their program of religious education. The standards of instruction, the enrollment, the schedule, and teaching conditions bear a close relation to their counterparts in the public schools, the relationship being wholly voluntary on the part of both church and public-school administrations, and implying no control of one agency by the other. Registration in the school of religion is contingent upon the written permission of the parents or guardians. Sessions are conducted on public-school days; the curriculum is usually considered a part of the pupil's total educational program, and therefore is included in the regular school hours. The place of meeting may be a church, some other building provided for the purpose, or public-school rooms for which proper compensation has been paid.

The week-day school of religion owes its rise primarily to changing concepts both in the field of education and of religion. First, since 1900, public education has witnessed an increasing volume of protest against the traditional forms of education which have stressed organized bodies of subject-matter and have given little attention to the needs of growing persons. The trend toward interpreting education in terms of attitudes and purposes, of mastery of self as well as of environment, has directed attention once more to the place of religion in the development of adequate ideals, a place recognized in colonial educational practice but partially obscured in the industrial expansion of the nineteenth century.

On this point it is worthy of note that the Department of Superintendence of the National Education Association has included in its statement of objectives the conviction that "the individual soul reaches out to orient itself in the universe" in order that life may assume "poise, dignity, and grandeur." The conclusion, therefore,

[1] De Pauw University.

is that "no greater task rests upon the secondary school than to help its pupils find their God."[2] Thus the formation of schools of religion that may function entirely apart from the political and economic relationships of the public schools, and yet furnish the necessary opportunity for a religious interpretation of life for their pupils, appears to meet a recognized need in the educational field.

Second, the theory of educational administration has undergone a change which in turn has had an important bearing upon the program of week-day religious instruction. It is a matter of record that the institution under discussion was first undertaken in 1913 at the suggestion of William Wirt, superintendent of schools, at Gary, Indiana, as the direct outgrowth of his now widely utilized platoon system of curriculum organization.

Some attribute the arrangement to release pupils for religious instruction solely to the fact that there were certain open periods in which pupils might elect some interest activity. It is more nearly accurate to say that back of the establishment of interest groups there was a fundamental principle; namely, that the schools should make provision for a broader educative experience than had heretofore been available. This concept of the school as the agency of society to make available, though not necessarily to provide through its own staff, that guidance into abundant living which all our children and youth should receive has given a powerful impetus to week-day religious education.

Third, the movement has been stimulated by changes in the concept of the nature of religious education. It was inevitable that the so-called "experience-centered" view of the curriculum, developed in public-school circles, should affect religious education as well. As a matter of fact, being less encumbered by economic and administrative considerations, religious education probably has utilized the theories of progressive education even more rapidly than have the public schools. The result is, the educational programs of the churches are coming to be developed on the principle of guided and shared experience, rather than with the primary aim of imparting religious information.

This principle by its very scope, however, makes impossible the restriction of religious guidance to one day in seven. A Sunday program of religious education obviously is inadequate. Thus the churches join the schools in seeking a way to make the establishment of religious ideals more prevalent, and both institutions find in the week-day schools of religion worthy means to this end.

[2] Department of Superintendence. *Sixth Yearbook*. Washington: National Education Association, 1928. p. 54.

At this point two important questions emerge: What is the bearing of this type of religious education upon the established principle of separation of church and state? What is the nature of the religious instruction offered the pupils released from the public schools?

In discussing the first question, Mr. Weigle, of Yale, discriminatingly suggests that "instead of being a question of separation of church and state, it is a question of the separation of religion from education." He notes that numerous pronouncements have affirmed the belief of our country's leaders in the contribution of morality and religion to individual and national welfare, and maintains that "the public school and the church have a right to co-operate in seeing that the untaught boys and girls are given their rightful religious heritage."[3] It would appear from eighteen years of experimentation with various types of week-day religious instruction that there is no disposition on the part of any church or church agency to seek the prerogatives of the state, either in education or elsewhere. The essential separateness of the church and state, in all their institutional relationships, is scrupulously maintained. The letter and the spirit of the constitution have been observed. Nevertheless the increasing importance given to religious education makes it imperative that no formal statement covering a situation a century and a half ago shall be invoked to hamper its contribution to a present need.

On the second question, the nature of the courses offered, there is no unanimity of opinion. The principle of voluntary participation, maintained from the outset, has made it possible for each church or church agency carrying on the schools to adopt the program regarded as best suited to its own constituency. The only common requirement has been that the organization of courses and the quality of the teaching staff be on a level with the standards for parallel grades in the public schools.

Various specific objectives are stated by different groups, but there would be considerable agreement upon the general objective as the creation of a social order, completely expressing the spirit of justice and good will, offering opportunity for the abundant life to all, and made up of persons who control their behavior in accord with an awareness of a supreme value which is discovered through a personal relationship with God.

Out of the numerous experiments in curriculum building, two trends are apparent. The first, which was dominant in the earlier stages of the movement, seeks to acquaint the pupils with the historic

[3] *Go Teach.* Report of Quadrennial Convention of the International Council of Religious Education, 1930. p. 236.

statements of religion as found in the Bible and in the doctrines of the churches, providing a fact basis for the practice of religious living. The second, a more recent development, seeks to secure increasingly significant moral choices, to improve the quality of purposes which the pupils form, and to enable the children to control their conduct on the basis of the life and teaching of Jesus. In practice these may overlap, but they represent distinctly different emphases. The contribution of the latter to that integration of personality toward which all education is directed is especially evident.

Probably the most critical factor in working out such a curriculum is the quality of the leadership using it. Here we are dealing with the discovery and development of motives, of spiritual awareness, and of effective drives toward desirable conduct. This task calls for keen religious insight, a sound technique of guidance, a sensitiveness to changing situations, an ability to modify procedure on occasion, and a sincere regard for the personalities under the teacher's charge. To develop such leadership calls for the resources of both general and religious education; training in one or the other of these two fields alone frequently proves inadequate and may be disastrous to the program. It is to the credit of the movement that, with no other compulsion than the desire to teach religion effectively, the leaders have demonstrated ability of unusually high order, and have achieved results which were unprecedented in a large proportion of the week-day schools of religion.

The Status of the Week-Day Church School

By HELEN M. SCHOEDINGER[4]

From three week-day church schools, started in 1915, 1916, and 1918, respectively, week-day religious education has expanded until, in 1929–30, 292 such schools were reported in Ohio with a total enrollment of 54,487 pupils, indicating that the week-day church school is meeting a definite need. The week-day church school "has been defined as 'those sessions of the church school which are held on week days either during or outside of school hours, continuing approximately throughout the public school year.'" Released public-school time proves more satisfactory than time outside of school hours. "It should be understood that attendance at these schools is entirely voluntary" and upon request of parents of pupils. Support should, if possible, be by churches and by church members.

[4] St. John's Church, Columbus.

Equipment and discipline should be comparable to those of the public school. In leadership "two fundamental factors must be sought: . . . vital and radiant religious character, and . . . professional training. . . . The specific training of the teacher should be of as high educational quality as that of the public schools and should include specialized training in religious education."[5]

As far as it was possible to ascertain by a questionnaire, 89 per cent of Ohio's week-day church schools in 1929–30 approximated these standards quite closely. Schools are of three types. Three per cent are individual church schools, 21 per cent are co-operative denominational schools, with standards, schedules, release of time, and publicity arranged by co-operative effort of churches, each church or denomination conducting its own school. Seventy-six per cent are community schools, with churches co-operating together in the promotion and conduct of schools. This co-operation is most commonly through the council of religious education, 66 per cent of all schools reported being thus maintained.

Community week-day schools reach a group of pupils who have never attended the Sunday school. From Findlay, with 1,000 children in ten such schools, comes the report "that nearly 200 of the children are not members of any Sunday school, while 500 of them have a father or a mother, and in many cases both parents who are not members of any church."[6] Aid given to the Sunday school is evidenced by report of 86 per cent of centers that their work has increased Sunday-school attendance and of 85 per cent of centers that it has raised the Sunday-school standard. The work is most commonly developed in Grades III to VI. The average length of period is 50 minutes, and 87 per cent of the schools have one period a week.

In Ohio "the churches are within their legal rights in using public-school rooms for teaching purposes under proper restrictions."[7] Of reported schools 44 per cent have availed themselves of this privilege; the rest, with one exception, are conducted in church buildings. Fifty-nine per cent of the schools are located in cities. Counties with largest enrollments are Montgomery, Lucas, and Hamilton. More than 55 per cent of the centers report development of their own curriculums.

[5] *The Promotion of the Week-Day Church School* (Bulletin Number 1). Prepared and issued by the Professional Week-Day Educators' Advisory Council of the Ohio Council of Religious Education.

[6] Minnich, Kathryn. *Report of Week Day Religious Education in Findlay, Ohio. February 25, 1931.*

[7] *Week Day Religious Education in Ohio. Statement of Principles.* Approved by the Week Day Educators' Professional Advisory Section of the Ohio Council of Religious Education. Columbus, Ohio.

Promotion of the work on a high educational and spiritual plane has been carried on by the Ohio Council of Religious Education through part-time service of a staff member and the Week Day Educators' Professional Advisory Section, composed of teachers and supervisors, which functions through a yearly conference, the publication of a bulletin and pamphlet, personal guidance, and a placement bureau for workers.

Religion and Everyday Living

By WILLIAM CLAYTON BOWER[8]

No student who is familiar with the history of education could doubt that education has historically considered character as its supreme end. Within the recent past, however, the development of more effective techniques in education has had the effect of shifting the emphasis, temporarily at least, from objectives to the processes by which education may be carried forward. As a result of this temporary shift of emphasis, we find ourselves deeply convinced that there needs to be a re-examination of the objectives of education, and a redefinition of the values which we seek to accomplish through the educational process. With the renewal of this emphasis upon the ends and values of education, we are witnessing one of the most significant movements in current education. That movement is the rise and development of character education in connection with public education as carried on by the state.

This conviction is deeply rooted in the recent thinking of educational leaders in America. If to the reports of the Department of Superintendence of the National Education Association we add the testimony of superintendents of school systems, we shall find many men who have become deeply convinced that the point of greatest need in contemporaneous education lies in the field of personal and social values. I have in mind a letter which came to my own desk some time ago from a superintendent of one of the systems of this state in which he said, "I am convinced that our greatest need in education in this community lies in the field of character. Therefore, I am about to propose to my board of education that we introduce into the regular program of this system education, not only in character, but in religion, such education in religion to be undertaken by the state, on state time, on state funds, under state supervision, and by state teachers. Is this a sound educational procedure?"

[8] University of Chicago.

This new development resets the problem of the contribution which religion has to make to character and everyday living. In our traditional thinking there were many who were convinced that religion was necessary to morality as a sanction. But when this idea is analyzed it often turns out that what was meant was that religion was merely an external sanction to morality. The concept of sanction resolved itself into an idea that incentives had to do with appeals to fear or reward. In fact, if we wish to know how persistent that concept is in current thinking, not only among churchmen, but among educational men, I might cite a statement from an internationally known leader of education in this generation, who said in a conference not long ago that what the young people of this generation need is "a good dose of old-fashioned Hell." Now, as a matter of fact, authority and external incentives in moral life are rapidly decaying in the minds of the youth of our generation. It appears that appeal to fear of any kind becomes increasingly futile. Meantime, the foundations that underlie the concepts of traditional theology have become increasingly unstable. Therefore, it turns out that the problem of the function of religion in everyday living is reset. Those who work in the field of public education and those who work in the field of religious education are forced back to a fresh analysis of the nature of personality, of the nature of the educational process, and of the nature of religion itself.

That raises the question whether, under these new conditions, if we raise education to a social and ethical level, and if we use the constraints of social approval and social expediency, a need or place remains for religion in education. I propose that we address ourselves to that problem and see what our judgment might be in the light of the analysis of the nature of religion itself.

The answer to this problem, so reset and rendered so much more complex under modern conditions of life and education, is not an easy one, certainly not one to be answered by any offhand and quick solution. Is not the answer to that problem to be found in a functional view of religion? In our generation profound changes are taking place in our thinking regarding religion itself. If religion is conceived in traditional, dogmatic, and institutional terms, then the problem of how Church and State may co-operate in this total educational operation is an exceedingly difficult one. But if we approach religion as we approach other problems of human culture in the mode of our current thinking, the answer becomes far more simple and more direct. In this changing view of religion we are moving away from the conception of religion as an organized body of authoritative beliefs. We are as rapidly moving away from a

conception of religion as an extreme type of isolated emotional experience. We are also as rapidly moving away from a concept of religion as mere participation in a religious institution or in religious ceremonies. The view toward which we seem to be moving is a functional conception of religion, functional with reference to the development of personality, on the one hand, and of effective group life, on the other hand.

I think this will become much clearer to us if we graphically represent to ourselves what is increasingly understood to be the nature of religion by the new science of the psychology of religion. The trend of scientific thinking about religion may be illustrated by a figure which has several ellipses converging at the center. One ellipse is marked "Scientific," another "Economic," another "Aesthetic," another "Ethical," another "Social." The word "Religious" was written over the center where the ellipses converged. This figure suggests the intimate relation of religion to everyday living and to all problems that are involved in conduct and behavior as these problems arise in the process of adjusting ourselves to our world. During the present century the psychology of religion has developed unmistakable trends. These trends have been in the general direction of thinking of religion in terms of our appreciations which have their roots deeply imbedded in the fundamental and unified values of living.

Let us, for example, let one ellipse represent our scientific activities and interests. Let another ellipse represent the whole field of our economic interests and activities. Let another ellipse represent the field of our moral interests and activities. Then, not to attempt to complete an entire scheme, let still another ellipse represent the "et cetera interests" and activities of life, all the rest of the interests that might be mentioned if we carried our analysis of human living to greater detail. Each of these interests and activities has developed its own set of values. For example, the field of scientific interests and activities has developed within its traditions, its subject-matter, its procedures, its body of scientific values, its objectivity, precision, continuity of antecedent and consequent, and intelligent control of processes. Our economic interests have also developed through their traditions, their ideas, and their technique a set of values which are relevant to the whole economic process as it is going on in modern life. So, also, our political activities and interests have developed their traditions, their techniques, and their sets of values. In like manner, our aesthetic interests and activities have developed their traditions, subject-matter, techniques, and values. In the same way, our moral life has developed its traditions, its standards, its interests,

and its values. Now, the modern psychologists of religion are saying that religion is not to be sought in an isolated and specialized body of values, that could be placed on a parity with these other specialized areas of experience and sets of values; it is not as though we could have another ellipse for religion concerning which we could say that here is a type of experience that is comparable with our economic, our scientific, our political, our aesthetic, and our moral interests. Rather, the psychologists of religion would say that religion takes its place at the point where all of these specialized areas of interests and activities, with their corresponding values, are brought together into what one might call a total meaning and worth of life. That unification and revaluation of all other values constitutes the nature of religion. It is at that point that God appears in human experience.

Now we are ready for a statement which I think throws great light on the problem we have under consideration. This statement, abundantly demonstrated by the historical data of religious experience, is that the pattern and content of religious concepts and practices are derived from the supporting practical experiences of their contemporaneous culture. If you look into the history of the Hebrews, you find that the concept of God, which we have placed at the center of this diagram, is not a static, but a continually changing, concept. For example, at that cultural level where the Hebrews were living a nomadic life, where they had primitive culture, where the activities and interests of the group were pastoral, where the group consisted of a small collection of tribesmen bound together by blood kinship wandering from pasture land to pasture land, God was thought of as a tribal God. When we come to the next period in the development of their culture, the period of migration and conquest, when this tribal folk migrated into and conquered the land across the Jordan, they entered upon a new type of activity, developed a new type of interests and became a militaristic people and developed a militaristic culture. In the ancient documents recording the experience of these people, this tribal God now became "Jahweh of Hosts," that is, a God of battles. You may have been shocked, no doubt, by the fact that in this ancient account the Hebrews should have attributed to their God certain commands of terrorism which belong to all militaristic operations. But when we see this concept of God against this background of militaristic culture we should not, for reasons made clear by modern psychology, be shocked by these militaristic conceptions of Jehovah; rather, we would be surprised if we did not find them.

One of the most interesting periods in that culture is that when these people reached the next period of their national development,

having passed over into their national habitat and possessed it, a new phase of their culture was developed. They became for the first time an agricultural people. At this time Yahweh of the pasture lands and Yahweh of the battlefields had become a memory to them. The process which has gone on in the history of culture and religion under similar circumstances went on in the history of Israel. Yahweh of the pastures becomes Yahweh of growing crops and of the fields. You have this result in the sixty-fifth Psalm, that interesting fragment of the literature of Israel which recalls as a memory the old militaristic period, "Who stilleth . . . the tumult of the peoples." The former type of culture has become a surviving memory. This religious concept has changed because the economic, the political, the social, and the moral interests, all feeding into the central area of our figure, brought new elements into the concept of God. Though I cannot go into details, I should like to bring out this further point, that when we next view this people in the international period, when their little country was set on a world stage between the two dominating civilizations of that ancient period, when this little land was lifted out of its obscurity and confronted with problems that were international, then it was that Yahweh became a universal, monotheistic, and ethical God, with the characteristics which Jesus expounded when he said that if anyone will worship God, he will not seek him in Mount Gerizim or in Jerusalem, but will worship him in the spirit. Religion will not be racial; it will not be geographical; it will be spiritual.

I tarry longer on this idea only to insist upon our taking note of the fact that this same process which we see going on in the field of history is going on in our contemporaneous culture in a most dramatic and astonishing way. Science, feeding its ideas and values into our concept of religion, has given us a God, not static or living in a little world, but a creative God operating through an infinite period of time and in a universe that is set on a scale of immensity that is beyond our imagination, and at the same time operating in a world of infinite complexity and detail. The God who lived in an ancient simple and flat world and who created it in six days now resides in a universe whose boundaries are beyond our scientific reach and whose extension in time is incalculable.

Consider also the influence of industry upon religion. The machine age has given us the idea of intelligence and of controlled creative power. As a consequence, we get the idea, not of an impassive God beholding the world from a distance, but of a God creatively at work in the processes of the world. Jesus said, "My Father worketh hitherto and I work." This concept of God fits into

the industrial, productive life. The same influence is seen in democracy, of which the preceding speaker spoke so clearly. All of this is to suggest that our concept of God has its derivation from these great areas of our practical experiences and from the values that reside in them.

When we shift from a dogmatic and institutional to a functional view of religion, we see that religion is by its very nature not only related to these interests of everyday living, but is rooted in them, and derives its substance and its pattern from them. So that what we have seen to be so dramatically impressive on this larger scale of a developing ancient culture and what we have seen to be true of changes in religion as it roots itself in the practical, everyday processes of our contemporaneous culture, we see also to be true of personal religion.

Of course, we could tarry upon many implications here. Some persons are alarmed when religious concepts change. They think we are losing God because traditional concepts are no longer able to validate themselves in the light of our changing experience. Not at all; we are discovering God. Some think that because of the radical and severe criticism to which the church is being subjected at the present moment religion is in jeopardy. Not at all.

These briefly sketched illustrations impress one with the idea that religion is coextensive with human experience of all ages, as old and as universal as human culture. Therefore, when we face this problem of helping young people to discover their world, to explore it, and to adjust themselves to it, a task which involves the whole operation of education, we stand in the presence of one of the most impressive facts of the human world: that religion which is not detached from the concerns of the everyday world and everyday living has its roots deeply imbedded in personal and social experience.

Turn this process which we have represented in our figure about and see what happens. We have seen how these various types of practical experiences feed into religion, giving it content and pattern. On the other hand, religion has a reciprocal relation of reconstruction with reference to every one of these types of experience. And it exercises this reconstructive function apparently in two ways. First, it subjects each of these specialized activities to the cross criticism of every other. For example, it submits the economic process in a machine age to the cross criticism of scientific values, of social values, of moral values, and of aesthetic values. Consequently, when any area of experience is subjected to the cross criticism of the several other organized values of life, religion exercises a profound reconstructive influence upon that area. But when, over and above this cross

criticism of scientific, social, aesthetic, and moral values there is brought to bear the criticism of the organization of all the values that reside in the concept of God, as it sums up or gathers together all these other values of our human life, we have an idea more heavily charged with meaning and reconstructive influence than any other word in our language. This unified and heightened body of ultimate values plays upon each one of these areas of our experience.

Now, I should like to point out the implications of all of this for what, as I see it at least, is the contribution of religion to everyday living. I shall set these contributions under seven captions, and I would be happy if we might interpret each of these contributions in the light of the figure we have had before us. I do not give these seven captions as exhaustive; I give them as suggestive. But I think each of them arises as a direct implication of what we have been saying about the functional relation of religion to the everyday activities and interests of life.

First, religion gives to the growing person a sense of at-home-ness in his universe. What I am about to say is not a criticism of science. We need more, not less, science. But I think all of us would be willing to agree that the first influence of science has been, on the one hand, vastly to extend our world in distance, and on the other hand, to increase its complexities beyond any sweep of the imagination. It has put into the foreground of our thinking the idea of cause and the interrelation of the phenomena of our world in terms of sequence, which we have called law. The result has been that we tend to conceive our world as a vast mechanism. This conception has tended to de-personalize our world and has left us with a disheartening sense of individual isolation.

I wish that I had here the letters read by a visiting professor at the University of Chicago last summer. He is a professor of philosophy in one of our great state universities. He described a marked trend toward philosophy in his university. He was interested in finding out what it was that had led to this shift of interest to philosophy. He read a number of letters from students. One of them was from a young man who said, "I have explored science in many of its departments only to find my world analyzed, gone to pieces. It lies about me in fragments, and the whole meaning of life has escaped me. Now I have turned to philosophy in the hope that in philosophy I may find a way of rebuilding a world that will have some meaning and significance for me, a world in which I can live a life that seems not to be futile." That letter will illustrate the sense of futility that has settled down upon great areas of our student life and upon our whole intellectual outlook. Religion seems to me

to make as its first contribution to everyday living the sense of belonging to a world in which one has some personal relations with a personality-producing universe. This makes possible a life that has in it some meaning. That does not mean that we should have less science; but it means that the scientific technique of analysis needs to be supplemented by a synthesis of our world such as art, philosophy, and, especially, religion can supply.

In the second place, religion gives a sense of belonging to a significant social group. When we think of the development of personality in its relation to group life, we at once realize how fundamental membership in any significant group is. The organized religious community is a group of great social significance that has connection with other contemporaneous religious groups throughout the world. It also has historic continuity over many centuries as a great tradition within which one may live. Furthermore, this community is devoted to a certain type of idealism, to the setting of life in terms of its cosmic relations and to the lifting of the problems of knowledge, industry, politics, art, and morality up into their spiritual and universal setting. To feel that one is a member of a group of such great significance, sustained by it and sustaining it, would seem to offer a great contribution to everyday living.

In the third place, and closely related to the one just mentioned, is the identification of one with a great cause such as that which religion affords. The men who work in the fields of personality are convinced that character is largely a matter of loyalty. Some would go so far as to say that after all the technique of character education is to get people identified with great causes. I would say that that is too simple and offhand a solution for so complex an undertaking, but nevertheless it presents one important factor. Religion, as it lies across the centuries and the continents, presenting a great cause sponsored by a significant group and calling for loyalty and devotion, offers one of the great contributions to the development of personal and social everyday living. Furthermore, religion has this about it as a cause, which is not true of every cause. It has always felt a deep sense of mission, and has enrolled great companies of martyrs, pioneers, and men who have had vision which they have derived from the highest ideals and from the unrealized possibilities of life.

The fourth contribution is that religion, through its various techniques, particularly the technique of prayer, offers a means for the free expression of conflicts, frustrations, desires, and aspirations. This function, as we know, is one of the deepest needs in the development of persons. It is out of this that the confessional has grown

up in some of our historic communions, notably, the Roman Catholic church. It is out of that need that something like the confessional is growing up in many of the freer Protestant churches. It is out of the same need that the whole process of counseling is growing up in state and private educational institutions. When our life is set in its relation to this personality-producing universe and we feel ourselves to be *en rapport* with God as the Supreme Being who understands and sympathizes with us in all these conflicts of the inner life and in all the frustrations and bafflements that beset us, we have a situation which makes a great contribution to the development of persons in everyday living.

In the fifth place, religion fixes attention upon the ideal aspects of experience and the unrealized possibilities of life. I have already exhibited this technique of religion in bringing to bear the cross criticism of the other types of experience and other sets of values upon any given set of activities or values. But more than that is the influence of the fact that we are responsibly related to God as the personal center of the universe, a cosmic relationship that contributes to the reassessment of life, through the subordination of that which is less good to that which is best in religious living.

In the sixth place, religion is a powerful factor for the integration of personality and also of group life. No one would question the place of integration in the development of personality in the light of the findings of modern psychology. There are three disciplines that contribute to this need of personal and group life. One of them is art, which deals with the appreciations in terms of the satisfactions which beauty affords. Another is philosophy, which interprets life in terms of a system of ideas. Religion, on the other hand, is concerned with the organization of the values by which persons live. It evokes a serious attitude toward these fundamental values which affect the ends of living and which call for action with reference to them.

The last contribution which I shall mention lies in the fact that religion offers an intrinsic sanction for the good life, not an external, authoritative sanction that appeals to fear or reward, but an intrinsic sanction that springs up out of the values of experience itself. Experience when subjected to evaluation with reference to ultimate ends generates its own incentive. I do not use the term "drive." I use the word "incentive," because when religion touches the experience of everyday living with this sense of its fundamental worth, we have a lure that urges experience on toward the realization of life's highest meanings and ends rather than a drive which operates from behind.

What School Surveys Disclose as the Major Needs in School Administration

By N. L. ENGELHARDT[1]

"BUSINESS ADMINISTRATION OF SCHOOLS" is the term which includes all phases of business management. Business administration and educational administration cannot be separated. Educational administration cannot be promoted without the advancement of the business aspects of the work. Neither phase of public-school business administration, whether primarily educational or pertaining to business, can be considered in isolation. It is unwise and even destructive to build up separate compartments for these two aspects of service.

In practice, the business administration of schools has been narrowly conceived and inadequately developed. In spite of its limitations and inadequacy, the word "business" associated with the administration of schools has created an aura which the uninitiated have been inclined to revere. This has softened the criticism for this phase of administration, and, as a rule, has forestalled attacks upon the business aspects of school administration similar to those which have been made upon the purely educational aspects of the work.

The term "business administration of schools" may be thought of at three different levels of management. The first level of management is that at which this service is ordinarily conceived. Here business administration concerns itself primarily with accounting, clerical, and routine tasks. It assumes no responsibility for management. It may lead, however, the opposition against the expenditure of moneys. At this level the business executive is frequently the watchdog of the treasury and the "inside" worker for the board of education. Business administration here is frequently thought of in isolation from the educational program. The slogan for its success is expressed in terms of dollars saved without any reference to the real need or accomplishment of the school system. In other cases, business administration at this level is harmless and more or less helpless. It has not organized its work, and, if public education were to be measured by its success, it would be classified among the "sick industries" of the day. There are other instances where business

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administration at this level is in charge of earnest workers who are seeking progress and who, as they mature, will apply their vision to what business administration can do on higher levels.

On the second level of management, business administration of schools may involve all workers in the school system. The activities of business administration, such as the acquisition of funds, the safeguarding of moneys in passage from the taxpayer to the final payment for a specified service or material, the management of the physical properties, and the like, will not have changed. However, not only accountants, auditors, and controllers, but teachers, supervisors, and superintendents share in these activities and their accompanying responsibilities. The combined thought and judgment of all workers are reflected in the programs which involve expenditure. The amount of time and thought spent on business administration by the workers will, to be sure, vary greatly with the individual. The teacher may devote a limited time to this topic, but, nevertheless, is truly conscious of the relationship between the moneys which are being expended in her classroom and the results which are being secured. The supervisor and director of educational activities make their recommendations with due reference to the real returns which society may secure from the policies which they approve. The principal of a school, or the assistant superintendent, is constantly aware of the need for discovering whether the dollar which he is spending could be spent to greater advantage with less adherence to tradition and more emphasis upon initiative. The superintendent of schools and his associate, the executive in charge of business affairs, are harmoniously relating educational and financial programs and presenting the justification for expenditures to a board of education alert to the responsibilities of their directorate. Some school systems in the United States are working upon this level of business management. The results are readily perceptible in the programs they are pursuing.

As public education enlarges its sphere of activity and assumes its full responsibilities in our society, business administration will be conceived of at a third level. It is rather significant that in the 160 pages of the March, 1931, number of the *Annals of the American Academy of Political and Social Science* where free-lance writers, corporation executive officers, social-welfare directors, labor-organization officers, and presidents of huge industrial concerns express their views concerning the welfare of mankind, little mention is made of public education. These pages, devoted to the irregularity of employment, technological unemployment, dependency in old age, factors contributing to the insecurity of workers, social duty to the

unemployed, stabilization of workers' income, and topics of similar import, treat of the most crucial problems of parents and citizens. Somehow, the educator is left with the impression, after reading these inspiring papers, that the work of the public school is apart from and separated from the work of the world. It is far from the thought of the educator that this should be so. It may, however, be well to have attention focused upon this failure to relate the work of public education more definitely to the life work of the greater part of its clientele. Those who devote a large part of their service to the business administration of schools cannot afford to ignore many of the financial implications of not only the industrial and social problems, as outlined in these *Annals*, but also the attendant problems which are constantly coming to the fore in our society.

School business administration must advance with due recognition of the problems which the sizes and number of governmental units present. Taxation, with its more recent implications, must be fully understood. Co-operative planning with eleemosynary, penal, health, and other programs must be encouraged. Long-range planning and budgeting, not only for local units but for larger areas, must be considered. The economic changes which are being encountered must be interpreted in terms of educational need, and financial programs planned with due reference to these changes. School business administration has the obligation of upholding and making achievement possible for the educational principles which our society has approved. It must be recognized that children attending school through a period of economic depression are entitled to as adequate an educational training as those attending school during periods of prosperity.

On this highest level of business administration the worker is not content with the *status quo* of his school system. He knows that new educational problems will arise out of the machine age which will challenge his ability as a leader and planner. He is conscious that new sources of revenue must be found and that present-day expenditures for education must bring a more significant return. In other words, the old order changeth. The challenge for the improvement of present-day education and for the advancement of education is being placed before our boards of education and executive leaders. This challenge cannot be denied on the business side.

There may have been an era in the development of our society when public education could well be satisfied with its devotion to the three *R*'s and other limited areas for exploration. That day has, however, passed. The interdependence of human beings, the sudden changes in their economic status, the accompanying emotional strains,

the re-evaluation of life values, and the human desire for progress are factors which compel public education to study and analyze the huge forces which are playing upon the lives of men.

Expansion in public education is inevitable. Good business administration anticipates this expansion. Good business administration uses the forces of the machine age for the improvement of education. Life must be made broader, more comprehensive, and more significant for all people. To accomplish this, definite programs, better financing, superior plant development, and more rigid accounting will be required. Here is where business administration will play a most significant part. The man or woman who would be a leader at this new level must develop the vision of a prophet, the skill of a statesman, and the preciseness of a surgeon.

Boards of education have always participated in the business management of schools, the degree varying with the size of the school system. It is assumed that membership on the board of education carries with it sympathy with the advancement of the public educational program. At least membership on the directorate of any other organization carries a similar implication. School-board members are frequently found, however, who feel that their chief function on the board of education is to save money. Such school-board members have no program, and thus leave one somewhat in doubt concerning how the saving can be accomplished. School-board membership should carry with it the obligation to develop the program for public education and to associate with it an adequate financing program. The school-board members of individual localities should not attempt to solve the educational problems of their communities apart from those of the state. The acceptance of a place on a school-board directorate should carry with it the responsibility of conceiving educational needs in state-wide terms and of financing educational programs in similar terms. If public education is to advance, it must learn that the best business management for its local schools can only come out of pooling the interests throughout the state and of profiting from the procedures and methods which the wisdom of a state can develop.

At this point, it is wise to consider the very nature of the business enterprise of public education. Management in public education concerns itself largely with buying. The school administrator is a buyer. He should develop special skills in this field. School administration presumably determines the specifications for its purchases long in advance of the time of purchase. These specifications expressed in terms of an educational program, the personnel to be

employed, buildings to be maintained and operated, and equipment and supplies to be provided furnish the basis upon which public moneys are secured for educational support. The business nature of this enterprise is thus rather unusual. Management seeks to secure funds which will enable it to carry on a definite program and then assumes responsibility for the safeguarding of these funds, their wise expenditure, and a complete accounting of the stewardship. School administration thus is vitally concerned with the sufficiency of the funds secured as related to the program advanced. Since these funds come directly from sources that are changing with the nature of society, those responsible for the business administration of a school system would seem to have an especial problem in this field.

In the survey reports of city school systems, practically no evidence is found showing that business management has concerned itself with the long-range or long-time program of financing the school system. In few cities has the program of financing capital outlays and developing school plants been definitely co-ordinated with the other capital outlay expenditures for streets, parks, police and fire stations, water supply, and sewer systems. It is clearly the function of business management to protect the sources of income and to assure itself that they do not run dry. It has, however, not been the custom of those locally responsible for school administration to plan income programs over any long period or to relate those programs with other demands upon society. Business administration should find it possible to instruct boards of education with respect to the needs in this field and to point out the results of failure to consider adequately long-time planning. It is not unfair to school business management to criticize it as having been quite negligent concerning many of the significant problems that have direct bearing upon the income which supports public education.

Long-range budgeting is essential on any level of business management. The most thoroughly satisfactory budget of this nature is yet to be prepared. It should be recognized that this is not a mere problem of accountancy, but that such a budget should be based upon managerial planning with reference to the trends of the educational program, changes in the bases of taxation, relationships between educational and other city proposals and developments, and administrative trends in personnel payment, debt retirement, and plant development. Training in government, economics, taxation, and financing is essential for the preparation and projection of such a budget. Professional and technical training should correlate highly with success in school business administration. Boards of education

have not yet fully recognized the importance of such training. This may be due to the fact that little stress is placed locally upon the size and significance of the business enterprise of public education.

In a city school system of approximately one hundred fifty thousand people, the board of education, responsible for the improvement and advancement of public education, has been content to leave in charge of the entire business enterprise a personnel staff limited in number, whose chief training has been courses in bookkeeping and stenography. This public-school system has an annual budget of over $2,000,000; its buildings are valued at $6,000,000; its sites and playgrounds have cost the community $1,250,000, and the educational equipment may be valued at approximately $700,000. It is quite evident that this board of education has not sensed the true significance of the business enterprise of public education if it leaves the management of a $2,000,000 budget and an $8,000,000 plant in charge of untrained people.

It was commonly said a few years ago that the persons in a school system who were least well trained to render the service called for in their positions were the elementary-school principals. Impressions drawn out of many school surveys lead to the conclusion that there is a wide gap between the comparatively few competent workers in school business administration and the general rank and file of workers in this field. This observation seems logical because of the supposition that school business administration is technically accounting or bookkeeping work only, while the success of public-school business administration rests upon broader principles of economics, taxation, and government. It is not to be inferred that accounting should be less well done, but that, in this age when machines will rapidly do the technical and mechanical phases of accounting, the business executive is obligated to make evaluation, interpretation, and prognostication of his sphere of service.

In spite of the constant criticisms which are being leveled at public-school current expenditures, only slight improvement is evident in the character and content of the annual budgetary statement originating in school offices. Two state-wide studies of local school budgets and budgetary practice disclose budgets which are mere financial summarizations appearing to have come full-blown from their cranial source. If these summarizations were the resultant of educational plans and financial programs developed for office purposes, rather than for publicity, there might be some validity in calling them budgetary estimates. But the office files frequently produce no additional papers upon which the details of planning appear. For

example, the following budget for a city of fifty thousand people is the only scrap of paper to be found in the school offices explaining the educational program and the implications of the financial expenditures. It reads thus:

BUDGET FOR 1930

Officers and teachers	$357,700.00
Summer schools—bonus	10,500.00
Janitors	12,000.00
Fuel, lights, power	10,500.00
Library	12,500.00
Upkeep and supplies	8,800.00
Sundries	3,000.00
Insurance	10,000.00
Total	$425,000.00
Sources of Income	
From city (property)	$328,000.00
From state tax	64,000.00
From state vocational board	12,000.00
From non-resident tuition	19,500.00
Library—fines and fees	1,500.00
Total	$425,000.00

The figures are in round numbers, as though dollars expressed in hundreds or in tens had no significance. Adequate itemization has been scorned and apparently many facts are being withheld. It must be borne in mind that the budget and budgetary practice reflect in large measure the general character of business administration.

Buying human service and buying material things are two major phases of administrative work in a school system. The selection of personnel for the teaching staff is purely an educational function. It represents a field where a more definite specification of the services required and more definite relationship between service rendered and results secured must be established if education is to expend its funds wisely. Purchases on the purely business side are constantly being made of services of contractors, architects, and other special workers in various fields. An analysis in many school systems of the relationship between service rendered and the amount and character of payments made to any of these workers leads to the conclusion that a higher degree of training and excellence of service are demanded from educational workers in a school system than from the other types of workers taking them as a group.

The purchase of human service will always involve many undefinable factors. Wherever it is possible to specify definitely the service to be rendered, it should be welcomed by both parties to the agreement. To define definitely the character of working drawings for a school building, to specify completely the service of a bus driver, or to stipulate in legal contract the exact results which may be

expected suggests the possibilities of betterment in business practice for many school systems.

Brick manufacturers, lumber corporations, and vegetable canners engage in the co-operative enterprise of improving and standardizing products. There is as yet in the field of school business administration no similar organization. The interests of the taxpayer would be advanced through scientific studies which determine the most satisfactory specifications for materials used either in the building or in the operation and maintenance of school plants, or in the advancement of the instructional program. A combined effort on the part of business administrators in a state or in the nation in the establishment of a research laboratory and a research program for analyzing materials of all types would result in the selection of superior materials and even in the reduction of costs. It is clear that a single local school system profits greatly from the assistance rendered by any scientific research program undertaken on a state-wide basis.

The staff charged with the responsibility for school business administration undertakes to safeguard school funds. Funds may appear in varied forms, such as cash or securities. They may also disappear in various ways before or during the process of expenditure. School business accounting should be set up in such terms that there is a complete administrative record from the point where funds are collected to that stage where they are finally dispersed by the school officials. The course of such funds may be likened to that of a train speeding over many miles of trackage. Every safeguard is advanced by administration to protect this train in passage. Its routing follows the predetermined outlines of a time-table. Its movement from point of departure to destination is checked by responsible officials along the line. The administrative channels through which all types of funds pass must provide protection for the administrator as well as for the organization. No insuperable difficulty stands in the way of accomplishment of this purpose in any school system. The analysis of the problem of handling funds is, however, not made in every detail in most school systems, although good management would have little difficulty in anticipating the points of leakage by routinizing all processes. School-board members frequently deceive themselves into believing that their signatures on voucher form or warrant are adequate safeguards against financial loss. It may happen that communities lull themselves into the belief that the size and importance of the school organization in themselves spell "efficiency." Officers and directors may frequently approve traditional procedures even though they result in monetary losses. A few cases are cited.

Case A—
A bank which is the depository of the school system holds the only key to the safe-deposit box in which the securities of the sinking fund presumably rest. No school-board officer examines the contents of this safe-deposit box. It is not fair to bank, school board, or community, to leave these securities without a better safeguard.
Case B—
In this community, school officers keep no records of income and secure no interest on bank deposits. The excuse is that the school system is fiscally dependent upon the city government, and therefore need not accept responsibility. It is not clear in this instance how much income the school system has lost because of the failure to check annually upon sources of income.
Case C—
An administrative officer paid on a twelve-month basis adds annually $400 to $500 to his salary and succeeds in hiding the act in the accounts which he alone supervises. Good management prevents such defalcation.
Case D—
Money received from sales of textbooks is placed in a separate fund and the responsibility is turned over to an executive officer who handles the funds in his special account. Such cases may be multiplied many times in our school systems. The handling of such funds should never be made the responsibility of an individual.

Linn enumerates many instances of failure to safeguard either through proper checking against the sources of income, by proper bonding of individuals handling moneys, or in securing adequate protection from the depositories of funds.[2] The loss of any dollar to a public-school system hampers the development of the educational program.

Plant management may be divided into various subdivisions: plant planning involving the determination of the character of the plant, the advance selection of sites, and the determination of the educational function of the buildings to be erected; the planning and construction of school buildings; the maintenance of school buildings; the operation of school buildings; and property accounting and safeguarding through insurance.

The technique of site selection has been greatly advanced within recent years. Most school surveys point out many expensive errors that have been made in past planning. The error may be that of excessive payment for land, or it may be in the form of withdrawal of lands from the tax rolls which might increase significantly in value and might have the possibility of producing high tax returns. Small

[2] Linn, H. H. *Safeguarding School Funds.* New York: Teachers College, Columbia University, 1929. pp. 10–20. (Teachers College, Columbia University, Contributions to Education, No. 387)

sites carrying the first units of expensive buildings provide great temptations to adjoining property owners to mulct school boards in time of need of additional land. Good business administration weighs the problem of advance site purchase in terms of all of its factors. Will it be more expensive to buy at the time of need, or will it cost more to have the community bear the carrying charges on an early purchase? Many indeterminates may be involved in such decisions, but the study of practices of railroads, telephone, and other public utility corporations should help in this field. Buying many school sites and erecting numerous small buildings where fewer large buildings would suffice have been common errors in school systems.

Under the second phase of plant management, planning and construction of school buildings, a few definite cases will illustrate what is commonly found in school systems.

Case E—

This community is rapidly growing. It has recently built junior high schools. It needs to expand its present buildings, especially those most recently constructed as they are the best buildings within the organization. The floor plans of one of these junior high schools show a "U"-shaped structure with an auditorium on one extension of the "U" and a gymnasium on the other. Both gymnasium and auditorium are on the second floor. The building has one main corridor and no subsidiary corridors (*See* Figures 1 and 2), and is limited in capacity far more so than should be, considering the large units which have been incorporated. There is urgent need for addition. The building itself cost approximately $300,000. To add to it necessitates the mutilation of the design and the destruction of at least $25,000 to $50,000 worth of the original building. In case the school system does not add to this building, its management must secure another site, must plan another building, and must carry duplicate overhead charges over a long period of years when one building, one cost, and one educational organization would have been far more advantageous.

Case F—

The specifications submitted to the business manager of a school system by its architect were reviewed in the course of a survey program. It was found that the specifications for general construction were loosely written and contained many loopholes of which a contractor might take advantage. The specifications for mechanical work, especially plumbing, and in a lesser degree electrical work, were not exact and contained omissions. In these two fields the amount of guesswork the bidders were required to do affected their bids and paved the way for extra charges and arguments after the contracts were let. Scores of items in the specifications were sketchily defined and provided no protection to the buyer.

Case G—

One school-survey report suggests that all the considerations that enter

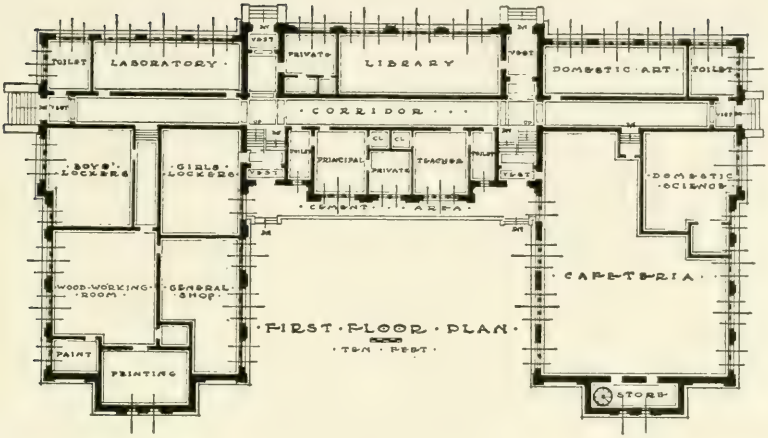

Fig. 1. First floor of a recently erected junior high school.

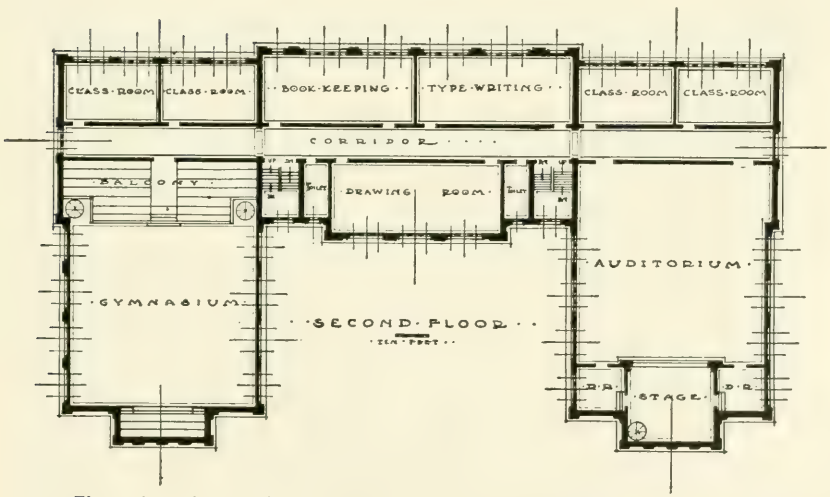

Fig. 2. Second floor of a recently erected junior high school.

into the planning, erecting, and supervising the erection of a school building are matters on which a layman cannot be expected to be competent. The report suggests that it is not fair to ask citizens to become members of a school building committee when their duties involve judgments which they are not competent to make. It is as undesirable for a group composed entirely of lay-citizens to be made responsible for the erecting and equipping of a school building as for the same group to construct and equip a hospital. This same report points out many instances where sums large and small in amount have been unwisely expended by the school board because of its failure to recognize the technical aspects of school building planning.[3]

In many studies of the maintenance of school buildings, it is brought to light that school business administration has infrequently developed a program of plant management. Superior business management considers its buildings and grounds as permanent in nature. It recognizes the importance and value of the investment. It endeavors to maintain the values at the highest possible level through a rotating and thoroughgoing maintenance program. Educational values surely accrue from well-maintained buildings. Thus two purposes are fulfilled from a well-organized maintenance program, maintaining plant values and creating educational values. It is a very shortsighted business policy to allow school buildings to deteriorate as rapidly as many survey photographs indicate. There seems to be involved in this failure to maintain school buildings a complete lack of understanding of this enterprise of public education, namely, its permanence and its fixed relationship to the community which it serves.

Through the social institution called "insurance," business management seeks to safeguard its investment in school plan. Apparently, insurance is very frequently misunderstood. The mutual nature of the enterprise is not comprehended. There should be co-operation between insurance companies and school business management to reduce insurance premiums to the lowest figure. Reductions in premium costs will result from superior maintenance and operating programs. Reductions are even accomplished during the period of planning the building. Two cases will illustrate some of the common practices of business management in this field.

Case H—

In this case no periodic appraisals of school property are made. Definite relationship between sound building values and the amount of the policy has not been established. Although the community is presumably insuring

[3] Strayer, G. D., Engelhardt, N. L., and others. *Report of the Survey of the Schools of Watertown, Massachusetts.* pp. 33–37.

all of its buildings, additions to buildings have been frequently overlooked. Periodic inspections and reports on fire hazards have not been made. All contents of the buildings in the community are lumped together in one schedule and are not identified by buildings. The insurance company's charges are accepted without any effort on the part of business management to assume its rightful share in the reduction of fire hazards, the inventory of contents, or the establishment of a definite insurance program.

Case I—

In this community the insurance carried on buildings varies from 10 per cent to 240 per cent of sound value. The rates of insurance vary without any reference to the causes. The charges vary with the insurance brokers who have sold the policies. No one definite insurance plan has been developed by the business management, nor is one single plan in effect. Apparently, expenditures are being made following the lines of least managerial effort.

There is a broad field of school business management in which no advance has been made, namely, that of equipment management. The helplessness of a school executive in selecting the equipment for a new school and the great loss of time in undirected and fruitless search emphasize the need for the development of this field. Much which is done in the field of equipment management today is based purely upon tradition. The complete analysis of equipment in any single school system shows only slight tendencies toward a definite program for equipment problems and their solution. The specifications for equipment have been written largely by the seller rather than by the buyer. The specifications may or may not be written in terms of the educational program which is being advanced. The nature of school equipment has tended in a measure to establish the character of school buildings. The true significance of an equipment program may thus be appreciated. In the age when radio, sound pictures, television, and other mechanisms are broadening education and making possible the exploration of new areas, a real change may be expected in traditional attitudes toward equipment management.

School business management will continue to develop toward the highest of the three levels described in this paper. Evidence of the improvement which has occurred within recent years will be found in the office and shop provisions made for business management in recently constructed school administration buildings in the United States. Even the smaller cities have come to the realization that all phases of educational management must be provided with satisfactory quarters. Superior management cannot be secured in inferior and cramped offices. Many communities are recognizing this fact. They have put an investment into housing accommodations for the administrative staff and are entitled to a service commensurate with the

character of their investment. The size and importance of the business of public education in any community should be reflected in adequate and dignified administrative quarters and in business management of the highest character.

The factors which condition improvement and success in school business administration are readily discoverable. Financial accounting, fund management, plant development, safeguarding money and materials, routinizing procedures, and maintaining records depend upon analysis, orderliness, thoroughness, and honesty. Thus accomplishment on the accounting and clerical levels depends upon certain old-fashioned virtues. Success on higher levels can only be brought about through intensive study and application in the more significant economic, social, and governmental fields of human endeavor.

Facts on Taxation in Ohio Cities

By B. A. STEVENS[4]

This report covered a statement of the findings and the conclusions growing out of an analysis of the 1928–29 tax rates in 1,506 tax areas in twenty-eight Ohio counties. The following conclusions are justified by the revealed facts. First, strict application of the tax-limiting provisions of the amendment to Article XII of the Constitution of the State of Ohio would seriously curtail the amount of revenue available for the support of the schools and other governmental functions. Considerably more than one-half of the cities and villages of the state would collect less than they are now spending for current expenses alone. Add to the current costs those debt-service expenditures which have been financed by inside levies and there scarcely would be a city or village which would not need to practice a sharp retrenchment in its expenditures. Second, the evidence seems to be unmistakable that the municipal governmental authorities have practiced, consistently, a policy of forcing the schools to seek all current expense levies, other than the levies of 2.65 and 2.20 guaranteed by statute, outside of the limitation. The practice is general of forcing the schools to secure voted levies in a volume which is out of proportion to the extent to which they share in the inside levies.

[4] Director of Research, Ohio Education Association.

High-School Librarians in Ohio

By EARL W. ANDERSON[1]

THIS STUDY WAS MADE to determine the extent to which the standards of the Ohio State Department for high-school librarians were approached in the year 1929–30, and to find the number of additional librarians needed then and annually thereafter to care for the needs of the state. The data were collected in December, 1929, by Mr. T. Howard Winters, Assistant Director of Education in Ohio, through a questionnaire sent to principals of public and private high schools enrolling more than two hundred students. Statements of findings made and supporting data will be found in the paragraphs which follow:

In 1929–30 the Ohio high schools of 500 enrollment and over would have needed 145 additional trained full-time librarians in order to meet the State Department standards set up for 1930–31. These standards specify for each such high school a full-time librarian whose training includes a college degree and thirty semester-hours in library courses. The 145 would replace the 57 full-time librarians having insufficient hours of library training and the 38 part-time librarians with inadequate library training whose positions should be full time. It would also provide the 22 schools needing librarians which now have none, and it would allow for the 28 annual replacements. Ninety-five of these 145 librarians might be provided through additional training of those not qualified who were already in library service, and through full-time service of 38 part-time librarians.

If the state requirements had been fully met in 1930–31, 43 additional full-time librarians would have been needed annually for replacements. This number would include 23 in the 185 high schools required to have one full-time librarian, 14 among 112 full-time assistant librarians, 6 among the 48 high schools enrolling less than 500 students that employ full-time librarians. This estimate, based on a turnover of one-eighth of the total librarian staff, makes no provision for the likely expansion of library service among the smaller high schools.

[1] Bureau of Educational Research, Ohio State University.

There probably will be needed annually 63 additional part-time librarians. There were found 233 part-time librarians in high schools of 200 enrollment or over. One-fourth of these were inexperienced; hence, replacements are estimated on this basis.

Summarizing these facts the state of Ohio needed 208 trained full-time or part-time librarians in 1930–31. Of this number 95 might be provided through increased training of the 1929–30 incumbents. Fifty full-time librarians for regular replacements and for schools now having no librarians would be allowed, and 63 for annual replacements of part-time librarians. The annual needs after 1931 are for 106 full-time or part-time librarians, 43 full-time and 63 part-time librarians.

These conditions seem to point definitely to a need for additional library-training facilities to care for the high-school library needs of Ohio. The fact that only 27 per cent of the larger high schools of Ohio met the librarian standard of the State Department in 1929–30, and that two-thirds of the librarians in schools of from 200 to 300 enrollment reported no hours of library training, indicates clearly a lack of training facilities.

The Librarian as Educator

By L. E. ROBINSON[2]

THE INTELLECTUAL AND MORAL LIFE of men, women, and children is continually in the making. The teacher is limited to the younger folk for his influence; the librarian is the main resource for adult education, but is not limited to that side of it. There is no type of education in which the librarian may not have a proper hand.

The public needs the librarian in the rôle of public educator to supplement what the teachers do, for everyone knows that the teacher's work is seriously handicapped without the co-operation of the librarian's service. More than that, the library is a continuation school for the community and the city; and the librarian is the instructor not only of all who voluntarily patronize the library for current reading, but of many whom, by her tact and personal inspiration, she may lure into general reading by her hints and suggestions on books and articles which, but for her own knowledge and interest, would escape their attention. Many a librarian has led vagrant readers into wider reading-habits than they, but for her piloting, would have ever enjoyed.

[2] Monmouth College and Superintendent, Warren County Public Library.

Such a rôle as educator naturally implies that the librarian must assume the obligation of developing herself into a good reader. She must come to know much and enjoy it. Her chief dread of dying should be that death will interrupt her leading spiritual pleasure in life. Such an attitude toward knowledge, and wide reading-habits as the means to it, will become contagious among many of her patrons. She has a reading personality which radiates through her words, her personal appearance, and, by its touch, makes a certain number of library patrons similarly minded. Such a librarian is indispensable to the community, rural or urban. Her influence can be immense, because her own life is growing perceptibly richer and happier and wiser with the passing of the years, and the community will catch her spirit. A librarian can take it for granted that she may not limit her service to routine and keep up with her community and her profession.

If the librarian grows into a public educator, and not a mere job-holder, she will aim to become liberal in her tastes, not narrow. She will need to do two things especially well. She will need, for the sake of her rôle as educator, to become a good judge of books and of articles in periodicals. This does not mean that she will be required to read them all deliberately. By cultivating her resourcefulness and keeping systematic reference notes on her reading she will accomplish this first requisite of a good librarian. The general principle lies in Lord Bacon's initial advice in his essay on *Studies*. The second need is a wide range of sympathy for tastes different from her own. A library represents a wide range of facts, ideas, and tastes; hence its widely diversified patronage.

I wonder whether many librarians make much of their opportunities to read selected articles in the magazines? The great body of readers becomes more and more interested in current thought upon their subjects. Magazines are coming more and more to meet the tastes and needs of those interested in current thought. Alert librarians will use this tendency to interest roving readers into reading habits of more settled directions, toward books and materials of specialized importance. The teacher may use some of the resources of compulsion; the librarian on the other hand, outside of her routine service, must allure the imagination and cultivate the voluntary interest of unawakened activities. As the magazines come to her desk for record and distribution, the librarian will find it a means of mental alertness to make a note of articles she will want to read, according to Bacon's plan and many another's, both for her own information and for recommendation to particular readers among her clientele. I know from experience that this works well.

The librarian will find it helpful to keep her own reference book, for articles as well as for chapters and volumes likely to be needed by readers who call for special reference information, or for special groups, clubs, or technical readers. She becomes adept in anticipating the reference demands of her patrons. This reference book is like a diary, constantly enlarging, constantly sifting its contents, checking its usefulness, constantly perfecting. It is her personal composition and her personal contribution to her institution. It gives her, by the very entries she makes, a second brain impression of her library resources and fortifies her memory for ready use. It will help her to remember and appreciate the hobbies of her readers. Before she knows it, she will have the materials at hand for a delightful magazine article and find herself breaking into print!

It is the universal tacit aspiration of librarians to encourage the increased reading of non-fiction. This tendency is likely to grow slowly of itself; but the suggestions I have made involve ways and means which the librarian as educator, if she is ambitious to play that splendid rôle in her community, may use with happy results, if she makes of herself a living example of a cultivated personality. This is her opportunity and this is what the tendency of her profession is definitely coming to expect of her.

Mental Disorders of Children

By MANDEL SHERMAN[1]

THE MENTAL DISORDERS OF CHILDREN are emotional in nature in nearly all instances. Even when the basis of a mental disorder appears to be a distortion of beliefs in which little emotion is observed, analysis of the condition usually shows that the basic cause is an emotional disturbance. Mental disorders of children develop as a projection of early habits into a new situation, as a justification of emotional attitudes, or an explanation of the individual's behavior. Early habits which are at variance with those commonly accepted as social or normal often have a profound influence upon the growing child, causing him to stand out as unusual when the demands of an ever-changing social environment require a change in his behavior.

Mental attitudes, emotional responses, and personality characteristics are often definitely established in a child as young as seven or eight. When he comes in contact with a world wider than his home, he is at once called upon to change some of his habits. His traits have become habitual to such an extent that he is unable to change them easily; thus he comes into conflict with the accepted standards of the new social environment in which he finds himself.

The not uncommon development of egocentricity in a child, the attitude that he is the center of importance, is a habit which often results later on in abnormal behavior. Such a child has great difficulty in adjusting to other people, for he finds that others outside the home do not and cannot take the same attitude toward him that his parents do. He is no longer the center of attention around which the activities of others revolve. As a result, he may either retire from social contacts or develop the attitude that others are being unfair to him. He may develop unusual outbursts of anger or a domineering attitude. A normal adjustment is difficult for such a child, because he is usually unwilling to give up the satisfactions which come from an exalted feeling of importance.

The symptoms of the mentally disturbed child often develop as a means of explaining his behavior. He finds that some of his behavior is not liked by others, and he begins to find reasons for the

[1] Director, Washington Child Research Center, Washington.

behavior, often out of keeping with his intelligence. We find this condition to be common in children and youths who believe that they are being unjustly treated or persecuted. There is at first a sense of failure and inferiority. The individual must then explain to himself the reason for his apparent failure. He begins to see in the behavior of others incidents which seem to be the cause of his failure. At first he keeps his manufactured reasons to himself, but gradually, as the explanation seems to satisfy him, he transmits it to others. Although the child apparently builds up an explanation of his persecution in a systematic way, the particular things for which he blames others are arrived at by trial and error.

The high-school boy who fails either because of lack of ability or because of distractions builds up a firm belief in the lack of value of education. If this is successfully countered by others he soon believes that his teachers or other pupils have been unfair to him.

In some cases this may be a justifiable attitude, but most of us solve our problems by disregarding the unfairness about us. If his emotional attitudes are not corrected, he goes further and believes that people are deliberately planning against his welfare. He may construe the remarks of those about him as unfair criticism. He may develop an idea that the unnecessary noises about him are made by people who are attempting to irritate him and thus cause his failure. No doubt everyone has some persecution complex, but in most of us reasoning overcomes the effect of such a complex.

In less frequent cases the observable abnormality of a child is the result of his attempt to explain his behavior. For example, there are children who develop auditory hallucinations, who hear voices talking to them. A study of a number of such children showed that their hallucinations developed long after their other unusual behavior started. A number of these children developed a great dislike for school, a few because of their apparent inability to do their work, and others because they believed they were being mistreated. Eventually, because they did not adjust themselves in another way, they developed hallucinations of voices telling them not to go to school. In the beginning these voices were indistinct and "came from the air." As this sort of explanation seemed to be a satisfactory solution of their difficulties, they developed it more definitely. Some of the voices seemed to come from definite people who had authority over them. In many cases the voices came from God or the Devil, the two most powerful beings. Naturally they could not disobey these voices, and they seemed to be emotionally satisfied with their behavior when they fully believed in the voices. Thus without being aware of the way in which they developed them,

they set up symptoms which seemed justification for their behavior. Because they were justified in their behavior by a voice from God, they could disregard the attitudes of their parents or school-teachers.

We gain comprehension of behavior disturbances only through understanding emotional disorders. Our knowledge of the way emotions develop justifies us in concluding that there is no inheritance of emotional defects or abnormalities. Whatever disturbances occur result from conflicts arising in the process of growth. The emotions are not definite even at birth. Fear and anger, for example, cannot be differentiated. The emotions develop by a process of adjustment to the environment as the experiences of the child increase, and his attempts to adapt himself to his environment become more and more distinct.

Even the bodily processes that occur during an emotion are not specific, as the physiologists have clearly shown. The way the glands and internal organs act depends more upon the way we adapt ourselves to a particular situation than to the emotion we are supposed to experience. Similarly, the names we give to emotions depend upon observed behavior rather than upon "mental experience."

The only two positive ways in which a child can react are by aggression and retreat. Aggressive activity is called anger, and retreat is called fear. When a child cannot easily control his aggressive reactions, or when they are beyond reason, we consider him to be emotionally disturbed. If he continuously retreats from situations which ordinarily call for some aggressive activity, he is also considered to be emotionally disturbed.

Ordinarily intelligence and emotion are not distinctly separate activities; both are processes of adjustment to the environment. In the case of the emotionally abnormal, less reasoning enters into the behavior; that is, the child is less able to control his behavior as an adjustment process. Nor does he realize that the method which he is attempting to use to adapt himself to a particular situation is the way in which he is becoming maladjusted.

In general, abnormalities of the emotions develop as an attempt to adjust to the environment. They develop, however, not from successful behavior, but as a result of frustrations, the cause of which is not clearly understood by the child. Because he does not understand the reason for his being thwarted, he tends to overestimate the importance of the conditions about him. He becomes more sensitive, and he reacts to conditions to which the normal child pays little attention. The emotionally abnormal child cannot be treated, therefore, by harsh reasoning and force because this type of treatment in itself exaggerates his abnormal emotional reactions.

Abnormalities develop as a result of the discovery by the growing child that the world differs from his conception of it. Therefore, abnormalities are more frequent in the older child than in the younger. Many mental disorders are seen in youths who have been attempting to adjust themselves to conditions which do not favor their progress. We find the beginning of such disorders in the adolescent and preadolescent periods in the form of various minor maladjustments.

Signs of abnormality can be found in every normal individual. The process of growth implies a process of dis-orientation and re-orientation. When the dis-orientation becomes permanent we call the individual abnormal. If conditions during the groping for a solution of problems are favorable to readjustment, the individual will re-orient himself, but, if the conditions are too difficult for a normal readjustment, abnormality results.

In all mental disorders the basic problem is withdrawal from attempts at social adaptation. It is an attempt to escape the difficulties of the world. In this process of escape there is often first a period of occasional phantasy in which the individual builds up imaginary situations in which he is successful. If in his real life he is unable to find as satisfactory a solution as in his phantasy, he gradually withdraws from reality into persistent phantasy. This life of phantasy requires a readjustment of beliefs and activities. The abnormality, as we judge abnormalities, is found in readjustment to this new life. Within the realm of this newly created world the behavior is normal; the abnormality is the discrepancy between the actions of the individual and those expected of him in the real world.

Phantasy of various kinds occurs in all children. Children as young as three and four often build up a life of phantasy in which they can project their personalities and gain the position they desire without the effort they have to make in ordinary life. In the same way the adolescent and youth also project themselves into phantasy in which the returns are quick and the effort necessary to gain dominance little. Often the return to reality is like the awakening from a pleasant dream in which one is a little disappointed that the dream lasted but such a short time.

When the desires of the individual are continually at variance with his real or imagined attainments he is likely to develop persistent phantasy. In many ways the flight into unreality, and therefore into abnormality, is like the flight into a narcotic habit; it is a way of escaping the realities of the world and the fear of failure. The youth who has been accustomed to conveniences and to successes within his home is suddenly faced with reality and with defeat.

His energy and perseverance are not sufficient to carry him through his difficulties, and he soon retires into a life of unreality in which he can attain his desires and at the same time justify his previous failure. In his unreal world—unreal to us—he talks to important people, he is invited to the homes of influential men and women, he is a success at his job, he is important, skillful, and wealthy. Such a mentally disordered individual may also believe that those immediately around him are plotting to destroy his importance. In this case the flight from reality is accompanied by a complex of persecution.

The mentally disordered individual often attempts to hide his real difficulties. One who is happy in his abnormality and believes in his own importance in nearly all cases was at first unhappy, with a sense of inferiority. The excitability and happiness of the mentally disordered child is an artificial cover for his unhappiness. We find this also true of normal people whose outbursts of exaltation are a means of hiding their depression.

The newer system of education which begins with the pre-school child may be a solution to many of the problems of mental disturbance. If the plans of some of the child-development institutions are carried out it will mean the beginning of education in the ways of the world at a very early age. Children will not be mentally protected in the home; the longer reality is kept from a child the more difficult is his adjustment to it.

Mental disorders have their basis in the cultural pattern in which the individual lives. If the environment causes few frustrations and results in little stress, mental disorders are unlikely to result. The less prepared the individual to adjust to a complex civilization, the more likely he is to develop an abnormality.

We have a good deal of evidence that the experience of the individual determines the type of abnormality he develops. The records of a West Indies hospital for the mentally abnormal show that 80 per cent of the inmates are suffering from what might be called a "want" abnormality. Their life of hardship, of hunger, of lack of shelter has caused them to be abnormally depressed. The depression, however, soon disappears when they are properly taken care of, but often reappears when they return to their poor environment. The more primitive the environment, in the sense that the environment puts little stress upon continual adjustments and readjustments, the less likelihood there is of abnormality. In a study of mountain people isolated from modern civilization it was found that there were no nervous individuals and no abnormalities. The children and adults were required to make few changes in their everyday behavior.

There were few harassing social conditions and no abstract and vague goals to reach. Life meant merely routine existence with few unattainable desires.

The more complex the environment becomes the more complicated the resulting behavior and, therefore, the more difficulties in the way of perfect adjustment. If we are to put children into a complex, unfriendly world we must train them early in life to be able to adjust to the conditions they are likely to meet.

Public Schools and Prevention of Delinquency

By C. H. CALHOON[2]

THE PUBLIC SCHOOL SHOULD OCCUPY a strategic place in any program for the prevention of juvenile delinquency. Children spend a large part of the formative period of their lives in school. In general the aims of education may be stated in terms of child guidance. It is assumed that the child will assimilate in school those necessary facts concerning his environment and will be stimulated in a way that will cause him to form good habits of thinking and acting. Preventing delinquency merely means doing a better job of child guidance, whether we are referring to the schools, the home, or the community.

Under present conditions the public school does not start its guidance program until after the child has already passed through an important part of the formative period. Is it not important that a thorough understanding on the part of school authorities of the environmental factors which have already influenced the personality of the child be had when he enters school? Would it not be possible to devote the first few months at the beginning of the school life of the child to the gathering of information concerning each youngster? Data about the child's experiences up to that time, the intellectual status, personality traits, the physical condition of the child and the parents, and the general home conditions might be included in such a study. These records could be kept in permanent form and added to each year. These data should not be gathered in a cursory fashion, but should be accurate and as complete as possible. Possibly an accumulative record of all marks together with a running account of unusual behavior and any aptitudes the child may show should be included. With a complete record of this kind, the teacher should be able to anticipate, or at least detect, early educational and behavior

[2] Bureau of Juvenile Research, Columbus.

difficulties before they become established. Also, as the child progresses in school, his past record in all particulars should prove beneficial in helping him when he is faced with larger and more complicated situations.

Such a plan has other important possibilities. The customary way of handling children with a behavior disorder is to wait until the child has grown to be such a terror that there is no tolerating him any longer before anything really tangible is done. Undesirable behavior can best be prevented before the child has become a serious problem. As the child passes from one grade to another, teachers do not at present have the benefit of a continuous, written record; they cannot see what methods of treatment have been tried, which have failed, or which have succeeded. Occasionally one meets an individual who believes that the child's next teacher should not be informed of his problems during the past year. Such an attitude is indefensible if guidance is to be really effective, for we are always better prepared for the future by a full knowledge of what has happened in the past, and a complete understanding of all the factors in a case must be the basis of any treatment we advise. Child guidance in the school should have a continuity of plan and purpose.

The public schools can materially aid in the prevention of juvenile delinquency by the establishment of special classes for unusual children, such as the mentally defective, the unstable, and the superior child. Once having identified the unusual child as he enters school, plans should be made for giving him special educational guidance. Children who come from unusual environmental situations or who are variants in mental or physical condition are much more apt to become delinquents than those whose conditions are normal.

It is essential that special classes be developed for the younger child. He should not be allowed to flounder about in his school work or to become discouraged because he cannot comprehend what is being required of him. We should not wait until he has become a serious problem before we give him the benefit of special-class instruction. In some of the larger cities special classes for the younger child are already being developed. It is just as important, if not more so, that we should have such classes for the beginner as for the older and more obvious cases.

There are very few delinquent children who can be characterized as being happy. Maladjustment and happiness are seldom found together. Special-class work suited to the capacities and peculiarities of unusual children is conducive to minimizing this factor. Often a happy adjustment in school has an indirect effect of a beneficial nature in other situations with which the child is confronted.

Guidance Work in a Teachers' College

By M. J. NELSON[1]

WE ARE HEARING A GREAT DEAL these days concerning guidance programs in which institutions of higher learning should engage. Certain liberal-arts colleges and some universities have set up rather elaborate systems for carrying on work of this kind. Personnel directors from all over the United States hold frequent conferences in which they discuss their common problems and stimulate experimentation in improving methods. If one asks a group of such personnel officers concerning the objectives of their work, one is likely to receive the reply that they hope to select a better class of students, to see that the students become better adjusted to the customs, traditions, and requirements of the school and to the communities into which they will go upon graduation, and to develop better personalities. If all of these are desirable objectives for liberal-arts institutions, and I have no doubt about it, certainly they are desirable for a teachers' college. What other institution has need for a more select student body, for better adjustment of students to the institution and particularly for better adjustment to the communities into which the graduates will go? In what other field is a fine personality a greater asset than it is in the field of teaching?

Yet, if one looks about among the teachers' colleges, one finds relatively few of them doing anything distinctive for their students in the way of personnel or guidance service. The reason for this condition is not to be found in any lack of appreciation on the part of the executives of the teachers' college for such service, but in the lack of funds by which most teachers' colleges are hampered. As someone has said, "Much more is expected of teachers' colleges, yet they are given only about one-third of the support normally granted liberal-arts institutions of the same size."

The proposal for a personnel program in a teachers' college which is outlined here is prepared with the limited budgets of these institutions in mind. The program would be a relatively inexpensive one, yet fairly adequate. It divides itself into three phases: the selection of students, the work with the students, and follow-up work.

[1] Iowa State Teachers College.

Turning our attention first to the selection of students for a teachers' college, we find that in many states executives are confronted with the fact that their work in this respect can be only advisory. The taxpayers feel that there are certain obligations which a tax-supported institution has, and that among these obligations is that of receiving into its freshman class all students who have completed a high-school course. The public is coming more and more to appreciate the fact that this theory is fallacious, but for the present at least, it is still quite prevalent in most states. Whether administrators merely advise prospective students to come or to stay away, or choose only those whom they desire from among those who apply for admittance, the machinery for discovering the desirable students will be much the same.

Since all of the institutions of higher learning in the state are interested in securing the best students obtainable, it seems to me that it would be worth while and much more economical if all of the colleges in any state would combine forces in their efforts. It would seem that all of the institutions might agree upon the best selective devices and utilize these in the senior classes of all of the high schools of the state and make the results available to all of the co-operating institutions. If, as is quite likely, this instrument is a battery of tests or a single test, that test might be given to all of the high-school Seniors. The scoring might be done by a certain designated institution, and the results be made available to all at the same time. This plan would make it possible for the colleges to encourage the most desirable students to enroll, and every college would have the same opportunity for learning who these most desirable students are. The expense of such a program might be shared by the co-operating members in proportion to the enrollment, and all institutions would have an equal opportunity to represent their particular merits to the prospective students. I believe that some such plan is already operating in the state of Wisconsin and perhaps in other states. If I have been correctly informed, some such plan has been instituted in the state of Ohio, also.

No doubt, additional information would be desirable; ratings by the superintendent or principal and other high-school teachers might be secured. It is an accepted fact that students who make only average scores on intelligence tests sometimes, by dint of effort or personal qualities, make excellent teachers. The student himself might be asked to fill out a self-rating sheet and to indicate his reasons for choice of profession. Such statements are often quite illuminating and have been used by the State University of Iowa with considerable success. Rating devices have in the past been too subjective and

unreliable, but there are indications that, when improved, they may have enormous value. Health ratings also form an essential part of the student's record.

All information thus obtained might be procured before the opening of a school year and be ready for service in September. The information which the personnel director might have on file, then, prior to the student's enrollment, might consist of his test record, his self-rating sheet and statement concerning his interests, the ratings of his high-school teachers, and the principal's statement of the work done in the high school. There should be constant experimentation to determine the usefulness of other types of materials. Whatever proves to be of value should be added, and this material, and copies of it, should be placed in the hands of the advisers perhaps a week previous to the date of enrollment in order that the adviser might become somewhat acquainted in advance with the prospective students.

Turning our attention now to the service which the institution can give the student while he is on the campus, we find that one of the biggest drawbacks to efficient advising is the enormous number of students who are assigned to a single adviser. Under such a system it is wholly impossible for the adviser to become sufficiently acquainted with the students whom he advises to be able to call them by name; and certainly it is impossible to keep in mind any data of a personal nature which are so essential in giving worth-while suggestions and advice. On the other hand, such conditions are probably not necessary. In most institutions the ratio between members of the faculty and the student body is such that ten or a dozen freshman students might be advised by a single member of the faculty, provided that the burden were somewhat equally distributed. With only ten or a dozen new students coming to him each year, and with an opportunity to study each case quite fully from the data gathered by the personnel officer, it would be quite possible for the adviser to become intimately acquainted with each of the students whom he advises. This would give the student the feeling, which is so often lacking in a large institution, that there is someone who is taking a personal interest in him.

Some opportunity should be given the adviser to mingle with his students in a social way and to observe their reactions under such circumstances. Every student should be encouraged to participate in some extra-curricular activity, and some system might well be devised by which a record of such extra-curricular activities might be kept. Special emphasis should be placed on having the students participate in the types of social activities which they are likely to encounter in the communities in which they teach. I am advocating,

then, that the adviser become a personal influence in the life of the students and not merely one who arranges schedules and provides for exceptions to faculty regulations. It may be that some members of the faculty are not particularly suited for this type of work. On the other hand, I believe that if the responsibility for a small group of students is placed upon them they will welcome the intimate association which such a capacity affords. If the instructor realizes that such counseling is as much a part of his job as is his classroom teaching, he is likely to feel that he should do the job well.

Orientation courses designed to acquaint the student with the possibilities in various types of teaching positions have not proved themselves to be universally helpful. Yet it is likely that there is a place for such a course, or at least for discussion of these possibilities in connection with the introductory course in the field of education. Perhaps such courses have often failed because of the difficulty of picturing the possibilities and limitation in each of the fields. No doubt, improvements in these courses are entirely possible.

Students would be expected to bring to their advisers problems of scholarship as well as other matters, and, in many instances, it is probable that the adviser could be helpful in overcoming scholastic maladjustments. However, it is not likely that such a program would completely eliminate these problems. It would remain for the personnel director, then, to supply some expert help in the more difficult cases. Some such plan as that which is at present being used at Ohio State University, under the guidance of Mrs. Luella Pressey, might well be put into effect. Under such a program, as I understand it, the maladjusted student is questioned at some length in order to determine the particular symptom which is responsible for his difficulty. The results of various tests are considered, and each case is handled in accordance with the findings. No stereotyped procedure can be outlined for this work. By a careful choice of workers, however, much can be accomplished in reducing failures and improving the social and educational adjustment of the students.

It is now almost universally accepted that the responsibility of a teachers' college does not stop when the student has secured his diploma. In the first place, the teachers' college owes it to the student to be of assistance in placing him in such a community and in such a position as will be best suited to his preparation and personality. Such placement service is already a part of many teacher-training organizations. In our own institution, for example, students are urged to register with the Placement Bureau. School systems are circularized concerning possible vacancies; candidates are carefully selected; and recommendations, together with the students'

credentials, are mailed to prospective employers. Conferences are arranged between candidates for positions and visiting superintendents or school-board members. There is also considerable counseling concerning the teaching positions in order that students may have adequate information regarding the vacancies and the types of positions into which they may go. Under the plan just outlined, the adviser's rating would become one of the most important bits of evidence concerning the student's fitness, especially concerning his social adjustments and his personality.

When the student is finally located, however, we may not be certain that success will be achieved; neither can we afford to take the attitude that it is up to the student to sink or swim. The responsibility of a teachers' college is such that every chance for success must be provided. Accordingly, each teacher must be encouraged to report any difficulties which he encounters to the institution from which he is graduated, and the institution must be ready at all times to furnish such assistance as may be needed in overcoming these difficulties. In some instances the difficulties may possibly be overcome by referring the student to helpful materials in published sources or by correspondence concerning the trouble. In other cases, it may be necessary for a member of the faculty to be sent to the teacher's schoolroom in an attempt to diagnose the difficulties and to apply such remedies as will be effective. Such a system also has the advantage of keeping the faculty more closely in touch with the public-school systems and the types of positions to which the graduates go. The importance of this can scarcely be overemphasized, since each year removes the instructor further from the problems of the public-school teacher and to some extent from the realization of these problems. Resident members of the faculty are, therefore, suggested in preference to extension workers for service of this type, since they would also be able to bring back to their departments much valuable information concerning the weaknesses in preparation which they find among their own students and among the students of other instructors.

The organization for the guidance program which I have just outlined need not be particularly elaborate. Most of the work of guidance would be done by the members of the instructional staff and would not entail such additional burdens as to interfere with their normal teaching schedules. The program calls for a personnel director, but this officer might also assume the duties of the registrar. In order to deal properly with the maladjusted students he would need a few part-time assistants, the number depending in a large measure upon the adequacy of the program for admitting or exclud-

ing prospective students. He should have a sufficient staff to carry on considerable experimentation in the optimal methods and instruments for selecting and guiding students. The position of the personnel director in the administrative set-up would be approximately co-ordinate with that of the dean, since he bears the same relationship to the guidance program that the dean normally bears to the instructional program. Just what the added expense for such a program would be in an institution of a given size, I am not prepared to state, but I am quite convinced that, in comparison with the cost of other types of service, it would be so low as to be relatively outstanding in its usefulness when the cost per student is taken into consideration.

Development of Personality Traits

By WILLIAM C. BAGLEY[2]

It seems possible to recognize on the mental side of human nature three groups of traits. The first of these has been very much in the foreground of professional and public interest during the past ten or fifteen years under the name of "intelligence." In how far the specific intelligence traits have underlying them a common factor of general intelligence is still a matter of vigorous dispute, but there is a fair measure of agreement regarding the validity and the value of recognizing certain traits as predominantly intellectual in character. A second group of traits are similarly summed up under the term, "character." The studies of character traits so far published suggest that these are fairly specific in their nature. Desirable and undesirable character traits may find expression in one and the same individual. Probably we all know at least a few people who would neither lie nor steal, but who along with these virtues also exhibit the vice of laziness. There are indications, too, that both virtues and vices may be very narrowly restricted or specific to certain situations of life. A student who cheats in an examination without a qualm of conscience may be quite the soul of honor in an athletic contest or a bridge game.

It is the third group of traits, the traits of personality, that, in an unguarded moment, I promised to discuss at this meeting. One who attempts such a discussion is pretty certain to be handicapped at the outset by the manifest overlapping of the traits included in the three groups. F. L. Clapp, who made one of the early studies of the personality traits that are important in teaching, asked school superin-

[2] Teachers College, Columbia University.

tendents and principals to name the more specific traits which, in their judgments, entered into what they would recognize as a "good teaching personality." He listed the ten traits that were mentioned most frequently, and then he asked another group of superintendents and principals to rank their best teachers, first in the order of their general teaching personality, and then in the order of their standing with reference to each of these ten specific traits. From his study, the trait that appeared to be most important in a good teaching personality was "address," or the way in which one meets people. Next in importance was "personal appearance"; then followed in order "optimism," "reserve," "enthusiasm," "fairness," "sincerity," "sympathy," "vitality," and "scholarship." Now quite obviously, these specific traits do not all belong to the same family, so to speak. "Fairness" and "sincerity" would seem to fall quite as justly under the rubric of "character" as under the rubric of "personality," and "scholarship" would seem to be much more closely associated with the intellectual traits than with either character or personality.

Charters, in his book, *The Teaching of Ideals*, furnishes another list of traits important in teaching. They are: "forcefulness," "sincerity," "sympathy," "good judgment," "perseverance," and "resourcefulness." Again "sincerity" and "perseverance" would seem better located under the head of character, and "resourcefulness" seems fairly analogous to what the psychologists define as intelligence. The much more extended lists of traits and trait actions that appear in the Charters-Waples *Commonwealth Teacher-Training Study* show similar overlappings.

For the purpose of our discussion, it may be advantageous to limit our conception of personality traits to those characteristics and qualities which are apparently most important in determining one's relations with people, one's social adjustments. Because the work of teaching involves these adjustments in a measure far beyond the demands of most other occupations, the teacher's personality is an important element in his or her professional equipment. To do all that can be done to develop the desirable personality traits becomes, then, a manifest function of the professional school for teachers.

It will not be amiss to start with two qualities that Clapp found in his study to be the most significant ingredients of a good teaching personality, address and personal appearance. Compared with such qualities as sincerity, sympathy, and enthusiasm for one's work, these seem both trivial and superficial. I am inclined to think, however, that in so far as the actual influence of one's personality is concerned, the importance of these two factors can scarcely be overrated. The way in which one meets people carries with it a notion of good man-

ners and gentle breeding. There may be other qualities more important for teachers of the elementary and high schools, but a crude, coarse, ill-mannered teacher is about the last person I should like to have in any school that my own children attended.

If we consider the matter of personal appearance, we may admit at once that it would be easy to misinterpret the term. I have heard it said that men executives in interviewing women candidates for teaching positions are prone to lay rather undue emphasis upon those qualities that constitute "good looks" in the other sex, but it is quite true that the qualities of personal appearance that show up well in a photograph may have no relationship whatever to efficiency in teaching. In a recent study which attempted to discern whether various criteria thought to be connected with teaching merit are actually so connected, Odenweller found that looking at the back of a photograph portrait was just about as helpful in selecting a good teacher as looking at the front. The truth is, of course, that regularity of features is not in itself a criterion of a pleasing personal appearance. Many plain women are attractive in appearance and so, paradoxical as it may sound, are many homely men. But all this does not alter the fact that a good personal appearance is a professional asset for anyone whose professional duties require him to be in plain sight of thirty or forty boys and girls for four or five hours every day and for two hundred days in the year.

The notion of good personal appearance carries with it, too, something that is very far from trivial or superficial, namely, neatness of person and of dress and good taste in dress. These are civilizing influences of fairly large magnitude. Like good manners and good breeding, they are especially important in the school, which should be above all else a civilizing agency.

Most of our professional schools, I think, are alive to their responsibilities for these important elements of the teacher's professional equipment. They recognize the social life of the school as an important part of its professional curriculum, and they direct the social life toward the development of these qualities. For many years I have said that the dean of women is one of the most important members of the professional staff of a normal school or teachers' college. The importance of the social life in these institutions also makes the provision of residence halls a desideratum of large magnitude. The professional school for teachers should be in a position to keep its students under the influence of the institutional life twenty-four hours each day and seven days each week. Some of the famous women's colleges require at least all Freshmen to live in the residence-halls, even though their homes may be in the same community. If the im-

portance of school life justifies such a requirement in an institution of general education, it would doubly justify it in a professional school for teachers. I have emphasized good manners and a regard for one's personal appearance because these are both fundamentally important to the teacher and relatively easy for the professional school to influence effectively. I have suggested that most of our professional schools are doing much to develop these qualities in their students.

Some of the professional schools are attacking the problem on a quite extensive scale. I shall take the liberty of quoting from a recent bulletin of the New Jersey State Department of Public Instruction describing the program that has been projected at the Newark, New Jersey, State Normal School.

. . . We hold in the State Normal School at Newark that there are two definite and somewhat distinct functions of training. First, we have the teaching of the knowledges, skills, and procedures that go to make up the "Materia Pedagogica" of our profession, to borrow a phrase from the medical field. We hold, moreover, that the second function is that of getting the student ready *as a person*, to do the important work of teacher. Herein we believe, the traditional teacher-training institution has fallen short, because of a disregard of the fundamental thesis that personality is a learned thing, at least for the greater part. Regardless of the brilliancy or lack of brilliancy of a student, despite his or her ability to comprehend the techniques of teaching—which after all are not too profound—teachers have failed, and are failing, as professional practitioners, because they are not effective persons.

How are we proposing to go about this "conditioning of persons" to teach? Largely, by setting up a program whereby we find out what sort of persons they are. *There is no one perfect teaching type,* any more than there is one perfect type of musician. The criterion is rather a balanced, normal, undivided self, who can go about his or her business of living with youth without malice, without prejudices, with a body that functions normally, and an emotional pattern under quiet control.

We believe the conditioning begins when we begin to select the student, and are working toward the ideal as rapidly as we can in the light of the ability of secondary school administrators to furnish us the needed cooperation. Upon entrance, we consider the work of the student personnel as involving the keeping of an accurate, continuing, cumulative record of all phases of the student's life which may conceivably have a bearing upon the wholesome conditioning of the student as a proper person to undertake the work of teaching, and then, the use of this information in an advisory procedure, designed to strengthen the desirable traits and eliminate or lessen the force of the undesirable. To do this, we assign each entering student to a specially informed faculty member, who acts as his or her adviser. The function of the adviser is to get acquainted with the student, to counsel him, to act as his or her personal friend-in-court. The administration centers around a Dean's Committee, composed of the

faculty advisers, the consulting psychiatrist, the visiting teacher, the nurse, the physician, the chairman of the research committee, the head of the department of health, the head of the department of education, and the principal. This committee is not a "sitting committee," but a functioning group, to the members of which, as specialists, are referred pertinent problems confronted in the personnel work. The adviser is the key person, inasmuch, as through the knowledge he or she obtains of the student's needs, the other specialists are set to work. Obviously, when a particular case is brought up, only those who have participated in its solution are called into conference. The process is similar to what Cyril Burt of England calls that of "Progressive Delimination" until we finally discover those causes of maladjustment, and recommend a course of action. A permanent folder file, in a locked, confidential case, is maintained by the dean. This contains the following data:

1. A cover sheet with identifying data
2. A copy of the entrance data
3. A life history of the student, written under our direction
4. A summary sheet for the adviser's comments
5. A complete, cumulative transcript of the health record, and recommendations
6. A summary sheet for the psychiatric social worker (visiting teacher)
7. A summary of the consultant psychiatrist's recommendations and findings
8. An academic, statistical, and special test and research record
9. A summary of the student-teaching record
10. The graduate placement and follow-up record

These are on sheets of varying colors for easy identification.

The Committee on Research is constantly studying all objectively obtained data, and attempting to discover trends in accomplishment and behavior which will prove indicative of needed emphasis in our work.

It is impossible to go into the details of the operation of this personnel service in this short paper. The experimental stage has not by any means been passed. But enough cases of serious maladjustment have been profitably dealt with to indicate that we are proceeding correctly. It must not be thought that all our work is with maladjusted students; but it must on the other hand be realized that this procedure brings out the fact that personal maladjustment is rather prevalent among students in college and normal school, and that orientation and advice is needed by the majority, if we are to raise up a generation of teachers who are personally conditioned to take up this vastly significant work.

What do we hope to accomplish by this procedure?

First, we will have at hand better data upon which to select students.

Second, we are insuring for the student a proper emphasis upon care of health.

Third, we are providing a means for discovering and remedying any conditions of life and habit, which are detrimental to personal integration.

Fourth, we are emphasizing academic training in its proper perspective, as only *one* factor in teacher training.

Fifth, we are eliminating guesswork and snap judgment with relation to students' problems.

Sixth, we are making use of known approved methods of personnel investigation and are discovering the need for others.

Seventh, we are building up a sounder basis for recommendation and placement.

Eighth, we are eliminating the necessity of the employing school official to do all the interpreting himself, on one short interview.

Ninth, we are building up a basis for a follow-up work which will be discriminative, and will bear some positive relation to discovered need.

One of the leading psychiatrists in our State holds that many of the behavior difficulties so prevalent in our schools among the pupils of elementary school age are directly traceable to the unhappy and unwholesome lack of personality adjustment on the part of the teacher. The next great advance in social work and education will undoubtedly lie in the field of personality. We are simply putting ourselves, at the State Normal School at Newark, in line with this emphasis.[3]

I have quoted at some length from this report because it represents the most extensive program for the development of personality that has so far come to my notice in connection with the professional education of teachers. The program is based upon a somewhat broader conception of personality than I assumed in the earlier sections of this paper. It conceives of the development of personality as a process of integration and seeks primarily to avoid the dangers emphasized by a certain school of psychiatry under the terms "maladjusted personality" or "disintegrated personality." There are schisms among the psychiatrists as there are schisms among the psychologists, and there are doubtless other points of view from which the problem could be attacked. It is good to know, however, that the problem is being attacked systematically and with a full recognition of its fundamental importance.

What the Superintendent Expects of New Teachers

By C. V. COURTER[4]

To get good new teachers each year, to filter the fit from the unfit in the great body of teaching material now available, this is one of the most important tasks that confronts the school superintendent. The successful recruiting of good teaching material prob-

[3] New Jersey. State Department of Public Instruction. *Educational Bulletin*, XVII (February, 1931), pp. 349 ff.

[4] Superintendent of Schools, Dayton.

ably has as much to do with the progressive improvement of a school system over a period of years as any one single factor. It is the teacher, in the last analysis, who makes the impress upon the growing, developing young lives that it is the chief function of the nation's school system to prepare for citizenship in that nation. How important it is, then, that a superintendent shall perform well this task of selecting the individuals who are to touch these young lives. What qualities shall the superintendent look for, what shall he expect in the new teachers that he must, each year, bring into the school system? The following is a summary of the qualities that superintendents will expect to find in an average degree at least in each new teacher:

I. THE TEACHER'S PERSONAL QUALITIES—

Personality.—Has individuality, is cheerful, is dignified and well poised, is vigorous and forceful.

Desirable habits.—Is neat, clean, and appropriately dressed; uses English well and enunciates clearly; is honest, straightforward, frank, genuine; has no artificialities; is prompt, accurate, dependable.

Personal equipment.—Has personal charm, has good health, has well-modulated voice, has intelligence.

Refinement.—Is courteous and considerate of others, leisure activities are of high order, has fine sensibilities, possesses moral character.

II. THE TEACHER'S ATTITUDES—

Toward professional growth.—Seeks self-improvement through reading and study, and is alert to discover new methods and devices; seeks suggestions and accepts criticism gracefully; takes initiative in asking for larger responsibilities; is determined to succeed; and will not submit to defeat.

In social relationships.—Discreet in personal conduct in and out of school; friendly, co-operative, tactful, and sensible in relations with others; can submerge personal aspirations for the welfare of the school; supports activities aiming at a better community.

In professional relationships.—Willing to extend self unstintingly, to assume extra duties, and to conserve strength for school work; supports and serves willingly in professional organizations; loyal to fellow teachers, principal, superintendent, and community; practices professional ethics.

Toward children.—Kind and impartial in treatment of children; has an intelligent and sympathetic understanding of children; enters into children's games and activities with interest; is self-controlled and patient.

III. THE TEACHER'S STANDARDS—

Of neatness.—Requires neatness in persons and dress of children; in appearance of desks, cupboards, blackboards, tables, floors, and books; in his own written work and that of the children; in use of materials.

Of pupil achievement.—Acquaints self with accepted standards of work

for grade taught; is painstaking in correcting written work; allows for individual differences, but stimulates each to do his best; gives out-of-school time in helping individual child and making home contacts.

Of pupil behavior.—Insists that children respect the rights of others; maintains a maximum of freedom and a minimum of license; gives attention to development of desirable social and work habits; encourages children to assume responsibility for their room.

Of pupil response.—Pupils are alert and happy in their activities; they concentrate thought and effort on the task in hand; they engage in worth-while activities when assignments are completed; they are prompt and courteous in giving attention.

IV. THE TEACHER'S TEACHING PROFICIENCY—

In planning.—Definite objectives in daily plans and in plans for larger units of work; evidence in conduct of class of foresight and of organization in the development; evidence of planning for individual differences through grouping of pupils and differentiated assignments; material and equipment ready at hand before class meets.

In motivation.—Is diligent in search for and use of worthy stimuli such as charts, graphs, current events, and visual aids; relates work to previous activities and plans for further activities; uses children's questions, suggestions, and natural interests as motivation; inspires them with determination to overcome their own difficulties.

In technique.—A knowledge and application of the laws of learning is in evidence; seems to divide time properly between her own and the pupils' activities; attempts diagnostic and remedial methods with emphasis on individual improvement; adapts methods to pupils' abilities and capacities.

In major aims.—Strives to build habits, form attitudes, develop appreciations, improve skills; seeks helps and aids in character training; places emphasis upon children, treating subject-matter as means to this end; concerned with socializing activities, group deliberation, decision, action.

V. THE EXTENT OF TEACHER'S CONTROL—

Of routine.—Routine reports are accurately and promptly executed; is careful that all phases of activity receive allotted amount of time; minimum amount of time consumed in class passing, distributing, and collecting materials; stresses promptness and good attendance on part of children.

In discipline.—Atmosphere of easy naturalness, little visible disciplining; secures instant, willing response from pupils; pupils evidence respect and liking for teacher, mutual courtesy and kindness prevailing; children participate in setting standards of conduct for group.

In organization.—Movement about the room shows planning by children with teacher for best interests of the group; pupils grouped and seated according to individual needs; pupils given responsibility individually and in groups; rules in evidence for order of wraps, waste paper, books, equipment, bulletin boards, and blackboards.

In management of details.—Attention given to light, temperature, and

ventilation; attention to posture, seating, and arrangement of desks; can be depended upon to give and carry out directions accurately; health rules, thrift habits, and school regulations are frequently emphasized.

At best the task of selecting individuals who meet these requirements is a difficult one. We are able to find out all too little about our prospective teachers. We need the best help that teacher-training institutions can give us. We expect teacher-training institutions to be increasingly selective in determining the individuals upon whom they place the stamp of their approval, and increasingly detailed in their analysis and description of necessary qualities. We recognize, also, that we have a responsibility to discharge in aiding teacher-training institutions to procure good material. We must increasingly encourage some of the best of each year's graduating classes in our school system to prepare for teaching. As teacher-training institutions and superintendents come steadily into more highly co-operative relationships of this kind, the welfare of the teaching profession will be raised, and the present altogether too inadequate supply of superior teachers will be increased.

Educational Equalization in Ohio

By R. C. ATKINSON[1]

THE REVISION OF THE TAX SYSTEM will no doubt have important effects on the methods of financing the public schools. Heretofore the general property tax has been the main support of local education, being the source of more than 90 per cent of the revenue of Ohio school districts. Any considerable change in the property tax cannot, therefore, but have an effect on school finances. While the taxation amendment to the state constitution provides new possibilities of revenue, it also creates new problems. Though the volume of revenue derived from intangibles or other forms of personalty may not be reduced or may even be increased through the substitution of new forms of taxation for the general property tax, there may, nevertheless, be a reduction in local tax revenue. An income tax can only be effectively administered by the state government, and some of the classified property taxes properly should be so administered. As a result, it would not be surprising if the revision of the tax system involved a reduction in the volume of local tax revenues and a substantial increase in the revenues of the state government.

Should such a change take place, Ohio would face the necessity of devising methods of applying part of the yield of state taxes to the financing of local government. Clearly, no other local service offers a more logical outlet for state funds than education. It is at once the most costly activity financed from local taxation and one of those in which the state as a whole has the deepest concern. Moreover, Ohio now ranks low among the forty-eight states in the extent to which the state government participates in financing the schools. In 1928, only two states showed a lower per-capita expenditure for education, chiefly because of the small contribution which our state government is making toward the support of the local school system. Conversely, a comparison indicates, at least in the case of cities, a relatively higher share of the local property tax going to the schools in Ohio than in other states.

The distribution of state funds for local school purposes may be based on any of three general principles, promotion, equali-

[1] The Ohio Institute, Columbus.

zation, and what, for want of a better term, may be called simple revenue apportionment. The first of these, promotion, usually bases the amount granted on the extent of the local effort as indicated by volume of local expenditures. It is an effective means of stimulating the introduction of new activities and the improvement of standards of service; but it tends to benefit the wealthy district more than the poor one, since the former can better afford to contribute the local share of the cost involved.

The equalization principle, on the other hand, applies the funds of the state to the local units least able to provide for themselves. In practice the equalization principle may be applied in many different forms depending on the degree of equalization attempted and the amount of state revenue employed. The tendency of educators in recent years has been to insist upon a complete equalization of the burden of a fixed minimum standard of education. Such a plan is not financially practical in Ohio, however, and probably will not be for some years to come. In the first place, it would involve the expenditure of many more millions of dollars of state revenue than are now in sight, and, in the second place, it is almost certain that the big cities would insist on a share in the distribution as they would have to contribute a large part of the revenue distributed. If this revenue were derived from taxes substituted for the old property tax on intangibles, the large cities would naturally desire to offset their losses of local revenue.

If it becomes possible to increase state participation in financing the schools, the most practical plan may prove to be a combination of equalization and simple apportionment ideas. Such a combination might be somewhat as follows: (1) a definite state-wide minimum standard of school support to be financed in all districts, and (2) provision for financing this minimum standard by: a good-sized state apportionment to all districts, based on pupil attendance, a property-tax levy in the city, exempted village, or county district concerned sufficient to finance the remainder of the minimum standard (but of not more than a fixed millage, say 4.5 or 5. mills), and supplementary state aid in case the sum of the last-mentioned two does not produce the full amount of the minimum standard.

Such a plan would help to offset losses in local revenue due to the exemption of certain classes of property from the duplicate. It would overcome much of the urban objection which might attach to a complete equalization plan from which they would probably receive little return. At the same time, it would provide a considerably greater degree of equalization than now exists and would finance the state standard with a local levy substantially lower than

at present. By utilizing the county district as a financing unit, it would secure a measure of local equalization and overcome many of the economic injustices of present district boundaries. Whatever plan is finally agreed upon, however, must be thoroughly studied, and its probable operation analyzed before any legislation is attempted.

The Supervisory Responsibilities of the Superintendent

By M. J. NELSON[2]

I DO NOT KNOW WHAT CONDITION OBTAINS IN OHIO, but unless it is rather exceptional it is likely that the teachers whom the superintendent of a village or consolidated school is able to secure are not of the highest caliber. In many states the teacher-training institutions are likely to feel that their best products should rightfully be placed in the larger cities. Certain communities so situated that they are able and willing to pay the topnotch price receive the "A" students; other large communities which offer inducements in the way of promotion, if not in terms of immediate cash, are able to secure the "B" students; whereas, the smaller communities, because they offer somewhat lower salaries and somewhat limited opportunities for advancement, receive the "C" students. Of course, there are many exceptions to this general rule, but I believe that you will agree with me that this practice is followed either consciously or unconsciously in most situations. There is very little justice, in my opinion, in such a practice. Certainly the teaching positions in smaller communities are no less trying than those in larger or more prosperous cities. A teacher in a larger school is often aided by teachers of special subjects; her load is lightened by the help of newer equipment; her teaching schedule is lighter than that of her less fortunate sister in the smaller and more poorly financed school. The Director of Placement in my own institution feels that the situation I have described is one which should not continue. He feels that since our smaller school systems, because of their large number, employ more teachers than do the larger systems, and, since the smaller-school positions call for at least as much ability as do positions in the cities, the smaller communities should be helped to secure the best teachers just as surely as are the larger communities. Even then the situation is such that the larger cities, because of their higher salaries and greater attractiveness to young people, do secure the cream of the output of the teacher-training institutions. Smaller communities take what is left.

[2] Iowa State Teachers College.

As a member of the faculty of a teacher-training institution, I wish that I might assure you that the teachers who are to be sent from these institutions in the future are to be finished products in every particular, and that they will need no supervisory assistance when they assume their positions in your school systems. Were it possible to make such a statement, I am sure that we would be entering upon a new day in education, a day of tremendous educational promise and startling professional progress. That such a state of affairs has not come to pass is due to several factors, but I shall dwell upon only one.

The typical teaching position of today is being filled with a teacher whose training is too limited and whose preparation for the work which he or she is called upon to do is all too meager. The job which confronts any teacher in this day and age, be it in the kindergarten, the fourth grade, the English classroom, the physics laboratory, or on the athletic field, is one of tremendous proportions. The demands upon this teacher are more exacting, the responsibilities are weightier, and the obstacles which must be overcome are more perplexing than in any other age of our educational history. It is true, of course, that the typical beginning teacher of today is better prepared than he or she has ever been before, but, at the best, the typical new and inexperienced teacher whom you took into your elementary schools early in September was only about twenty years of age and had been favored with only two years of training above a four-year high-school course. Now no responsible business man would expect a great deal of a new office helper with no more maturity or training than that, and he would never entertain any other notion than that he must give this inexperienced worker a great many helpful suggestions and shower upon him a large amount of careful direction if he is to realize any significant returns upon the salary investment which he is making. No head of an engineering concern would assign a new employee of equivalent training and experience any very responsible tasks for a considerable period of time following the beginning of service. Again, if such a person should hang out a shingle to practice medicine or law or dentistry, I am sure he would pass through a long and trying "starvation period" before experiencing any marked degree of prosperity. Your beginning high-school teacher is only two years older with two more years of training, and all of the comparisons which have been made are just about as apt and pertinent in his case as in the case of the elementary-school teacher. If I were a farmer and had a sick cow, the chances are good that I would think twice before calling a

twenty-one or twenty-two-year-old graduate of a veterinary college if an older and more experienced man were available. Yet we do not seem to hesitate to place a young, inexperienced, and untrained teacher in charge of 35 or 40 youngsters, with different resources and capacities, with diversified imperfections and shortcomings, and with varying degrees of ambition and aspiration, and hold him or her responsible for their physical, mental, and moral development. There is really no comparison between the complexities, the intricacies, the public importance, and the fundamental significance of the two jobs.

What I have said should be sufficient to call attention to the dire need for supervision and more particularly in the smaller school. Yet here are no special supervisors, no supervising principal, and, in most instances, no regularly constituted supervising agency. The job then usually falls upon the already overburdened superintendent. This job is, however, so all-important that the superintendent should dispose of his other duties as expeditiously as possible in order to devote all possible time to this task.

If there is any question concerning the value of supervision one has but to point to such studies as that of Pittman, who found that the children in supervised schools made a much greater gain than did the children in unsupervised schools. An earlier study by Courtis had indicated this same fact, while a later study in two California counties revealed that the children in supervised schools did 170.8 per cent of a normal year of school work while pupils in unsupervised schools accomplished only 97 per cent of a regular year.

Many superintendents in small school systems are hesitant about the form which their supervisory activities should take. Perhaps no better suggestions are to be found anywhere than in a recent *Research Bulletin of the National Education Association* which is entitled "The Principal at Work on His Problems," and it is to this publication that I am indebted for most of the suggestions which I offer.

Supervisory visits are essential if the instruction is to be improved. In no other way can the supervisor become acquainted with the actual techniques or sense the high-points of the teacher's efforts. Some superintendents are hesitant about making such visits because they believe that they will be resented by the teachers. Kyte and Valentine found that the opposite is the case; namely, that teachers want supervisory visits of the right kind. We are generally accustomed to believe that college teachers are least friendly to any intrusions into their classroom sanctums. Yet it has this year been my privilege to spend at least one hour in the classroom of each of the members of my staff, and I have yet to note the slightest trace of resentment.

Of the three types of supervisory visits—the surprise visit, the scheduled visit, and the invitational visit—the last-named certainly is the most desirable because of its potential possibilities. The supervising officer who has gained such confidence among his teachers that he is invited by them to observe in situations where the teacher is having some difficulty should feel that he has made a great advance indeed in establishing the proper relations with his teaching force. The only danger in the invitational visit is that such visits may be limited to only a few of the teaching force and these the least in need of such assistance. Next to the invitational visit in value comes the scheduled visit.

An advantage of the scheduled visit, from the viewpoint of the superintendent, is that he will thus set aside a fixed time for his supervisory activities. The importance of this can scarcely be overestimated. According to Nutt:

> One of the difficulties which he must overcome is the tendency to allow administrative duties to supersede the duties of supervision and to encroach upon the supervisory schedule. This tendency can be effectively checked through educating teachers and pupils to bring all administrative matters to the superintendent during the hours set aside for administration. Only real emergencies should be considered at any other time and these cases are not numerous. The superintendent must not yield to requests for consideration of the many little matters that come up in the course of the day. Practically all important administrative matters can be anticipated and they can be adequately handled within a relatively brief period of time each day. The superintendent who is not able so to organize and routinize his administrative affairs is not adapted to the dual task of the superintendent.
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> . . . The suggestion has been made that the superintendent should not yield to the request for consideration of minor matters during the time set aside for supervision. This point needs special emphasis. The superintendent must fight against the tendency to be disturbed by trivial items and to magnify their importance. In other words, he must not allow himself to become little-minded and be absorbed in the doing of little things, many of which might very well be neglected indefinitely without serious detriment to the schools. If he will set himself resolutely against the petty demands upon his time, he will find that many of these demands will cease to be made and he will no longer be the "chore boy" to whom everyone runs upon the slightest pretext. Moreover, refusing to be disturbed and engrossed by the many unimportant items will enable him to see the whole administrative program through a broader perspective. This broader mindedness will give him a truer evaluation of the various parts of the whole field in relation to each other and to the unified whole.[3]

[3] Nutt, Hubert Wilbur. *Current Problems in the Supervision of Instruction*, pp. 42–43.

It is probable that the visits of most supervisors are too short rather than too long. It is generally desirable to remain through an entire period if that is at all possible. Shorter visits bring criticism because the visits are considered "inspectorial in nature and entirely too superficial." Seemingly the most important phase of supervisory visitation is what is done while the visit is made or in the conference following the visit. Whether one should or should not take notes is a moot question and probably makes little difference. The important thing is that observation be made of the learning processes as well as of the more evident teaching processes, and that at least a part of what has been observed be talked over with the teacher concerned. Following a visit an individual conference should always be held, and at such a time that the conference is not likely to be interrupted before there has been opportunity for complete discussion. Perhaps the inexperienced supervisor will do well to have with him, when he makes his visit and during the conference, one of the supervisor's check lists which are available. Not much has been said of the matters to be observed, that depends too largely upon the type of teaching to lend itself to general discussion. One may suggest, however, that even if the superintendent is not particularly competent to supervise he will undoubtedly make a few good suggestions, and the very fact of his visits and apparent interest is likely to be stimulating to better effort.

In addition to the visits and the personal conferences, other supervisory procedures are often employed. Many supervisors and superintendents list under "supervisory activities" the administration of a testing program. Such a program of tests will probably not be very beneficial and may be so administered that the superintendent becomes simply a clerical worker. It is not the testing program as such that is of value, but rather the work that is done following this testing program. A careful study of the results, showing the teacher where she can secure help in remedying unsatisfactory conditions thus revealed, and the direction of a program of remedial instruction may, on the other hand, be considered as supervisory in character and is often a great aid in the improvement of instruction.

A type of supervisory technique which the superintendent is in a position to employ, but which he too often neglects, is that of demonstration teaching. As is pointed out in the *Research Bulletin* cited before, this method is not used extensively because of the feeling that the supervisor must give such demonstrations himself and that such demonstration lessons must be models of teaching procedure. The superintendent need only draw upon his best teacher in a given field

for demonstration lessons. Every teacher worthy of the name has some special interest, and this may well be capitalized. On occasion, outstanding teachers may be borrowed from another school system, and the services of certain extension workers are sometimes available for this purpose. Demonstration lessons need not be models; in fact, some of the most wholesome discussion is sometimes provoked from the observation of demonstration lessons which leave something to be desired.

Another supervisory agency of considerable importance is the teachers' meeting. Very often these meetings are devoted to administrative problems, but there is no good reason for limiting them in this way. By careful planning, only the first two or three meetings need be devoted to administrative phases, and the remaining time can be spent in supervisory work. Here again one can hardly offer suggestions of a concrete sort because of the differences in the projects in which the various schools are engaged.

What I have been trying to say concerning the supervisory program to be followed by the superintendent of a small school system is so ably summarized in the *Research Bulletin* to which I have already referred that I am taking the liberty of concluding this paper with a rather extended quotation from that publication. I have taken the liberty of substituting in each case where the word "principal" is used, the word "superintendent" since what is said of the principal in this connection applies equally well to the superintendent of one of the smaller school systems.

> Through the delegation of simple duties the [superintendent] is able to devote time to the more technical activities of administration and supervision. The formation of teacher committees on measurement can relieve the [superintendent] of some phases of pupil adjustment. A program committee can provide the demonstration lessons, lectures, and discussions for many of the teachers' meetings. Committees in the various subjects or grade levels can arrange their own group conferences, assemble instructional materials, and issue bulletins on methods and devices.
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> The avoidance of routine is closely associated with the delegation of duties, although the emphasis in this paragraph is upon professional study and contacts. There exists a danger in supervision of the [superintendent] falling into routine procedures. He may observe classes only for 10 minute periods, or take notes which are never shown to the teachers, or give many standard tests without sufficient emphasis upon interpretation, or hold teachers' meetings of the lecture type. The difficulty in many such situations is a lack of knowledge of new procedures. Professional publications offer the [superintendent] unlimited possibilities to acquire new knowledge. Convention meetings have proven useful to many [superintendents].

Cooperation with special supervisors offers the [superintendent] an unusual opportunity to improve the quality of his supervision. Usually supervisors have specialized in particular fields and their suggestions on instruction represent expert advice. They can indicate to the [superintendent] the exact skills, habits, and attitudes to look for in children. The pooled resources of supervisors and [superintendents] offer an opportunity to both groups for professional profit.

One of the best means of improving the [superintendent's] supervision lies in a questionnaire survey of the needs of the teachers of the particular school. The needs as revealed by a study of the situation might indicate that pupil adjustment demanded the [superintendent's] full supervisory time to the marked reduction of observation; or, the situation might indicate the need for a balanced program consisting of all kinds of supervisory procedures; or, the study might reveal the individual differences of teachers and the necessity of a supervisory program adjusted to each class situation.

The improvement of the [superintendent's] supervision in a quantitative way generally requires an increase of the relative amount of time given to supervision as compared with administration and other duties. The means toward this increase of time are: (1) comparisons with checklists; (2) delegation of responsibility; and (3) adopting a daily schedule of work.

A [superintendent] may compare his work with a checklist and make an analysis of his specific activities. A study of these activities not only suggests new activities worthy of attention, but it should indicate to the [superintendent] whether he is spending too much time on petty duties. For example, some [superintendents] are held to the petty routine of the office by the telephone calls. It would be better to announce office hours for important calls and during the rest of the time to assign pupils to receive the messages.

Someone has said that one of the best indications of an administrator's executive ability is his skill in getting things done by others. Certainly it is true that many minor clerical and administrative duties can be given over to the clerk, teachers, and pupils without hardship to anyone. Through the delegation of routine work to others the [superintendent] may obtain additional time to devote to the more important administrative and supervisory obligations.

The adoption of a daily schedule of work has been recommended as a means of systematizing the [superintendent's] work. In practice it has been used not only to systematize the activities of the [superintendent], but to increase the amount of time given to supervision. Under this plan the [superintendent] allots a given amount of time to administration, supervision, and so forth. By carefully adhering to the program and at intervals increasing the allotment to supervision, the day eventually comes when the increased time becomes a matter of habit.[4]

[4] "The Principal at Work on His Problems," *Research Bulletin of the National Education Association*, IX (March, 1931), pp. 126 ff.

The Superintendent of a Village School

By WALTER D. COCKING[5]

LESS THAN A CENTURY AGO the first superintendent of schools was appointed. In the same year, 1837, boards of education at Buffalo and Louisville employed full-time officers who were to be responsible for the educational affairs of those cities. Schools at first were completely operated and controlled by civil officers. As education increased in importance the responsibility for supervision of instruction was vested in an individual who was known as the "head teacher." The civil officers became known as boards of education. These boards were given the power to delegate certain responsibilities of education to small committees and later to a committee of one. Out of this committee of one has developed a professionally trained executive whom we now call the "superintendent of schools." Engelhardt says that today there are more than sixteen thousand superintendents in the United States, and this number does not include county or district superintendents.

Why was such an office created, and how did superintendents come to be? The operation of a public-school system in any community large or small is ordinarily the largest industry in that community, involving more people and requiring the expenditure of more money than practically any other enterprise. The operation of a modern school system is highly technical in character, requiring scientific planning and expert operation.

It is recognized that a public-school system exists for the education of boys and girls. The efficiency of the operation of the system is determined by the education provided for and secured by the boys and girls. It is a principle of governmental procedure in a democracy that the people shall delegate certain of their responsibilities to regularly selected representatives who shall be held strictly responsible for the discharge of the duty allocated to them. Such a body, commonly called a "board of education," is responsible for the educational system under its jurisdiction. The question of importance is, How can it best discharge this responsibility? Large industries have provided an answer by holding their boards of directors responsible for the policies under which the business is operated, for the securing of trained and competent executives, and for an evaluation of the results which are secured, commonly known in business as profits. Authorities on public education are agreed that the organization of a public-school system should follow much the same procedure. A board of educa-

[5] George Peabody College for Teachers.

tion responsible only to the people of the community should be charged with the determination of policies for the school system; should secure the best-trained and most competent individual as its executive officer; should hold that officer responsible for the carrying out of policies enacted, for advising it on matters of procedure and policy, for securing competent assistants to aid him in the discharge of his duties and the conduct of the entire enterprise; and, finally, should employ efficient methods of determining the results of the policies enacted and carried out.

In addition to their duties on such a board, the individual members have their own personal and professional obligations which involve most of their time and a good deal of their thought. A member of a board of education does not have the time, even if he had the training, actually to operate a system of schools. Furthermore, the business of education has grown to be a highly involved and technical enterprise, requiring special ability, special training, and special experience. It should not be expected that a member of a board of education has these abilities. He discharges his obligation to the people by selecting an executive, who by training and experience does have the ability necessary to conduct the plan efficiently.

Administration is not an end in itself. It exists only as a means which will tend to bring about quickly, readily, and efficiently the end for which the organization exists, which in this case is the proper training of the youth of the city. What, then, is the type of organization which can best bring about the desired ends? To answer the question adequately certain principles must be presented and accepted: (1) The aim of the school is the education of boys and girls. (2) Organization and administration exist to further this aim. (3) That organization is best which is simple and direct, yet adequate for the purposes for which it exists. (4) The superintendent of schools is responsible for all the activities of the school system. (5) When necessary, certain responsibilities should be delegated by the superintendent to assistants specially trained and fitted for the tasks assigned. (6) There should be authority commensurate with the responsibility.

Cubberley comments on the work of the board of education thus:

> The recent tendency in city school administration has been to increase the importance of the board of education as a legislative body, to decrease its importance as an executive body, and to centralize authority and responsibility in the hands of one or more well-trained and capable executive officers, with the superintendent of schools as the directing and coordinating head of the executive organization.[6]

[6] Cubberley, E. P. *Public School Administration*, p. 83.

Not all boards of education are organized in this manner, but, as one surveys the practice in American school systems at the present time, he must be convinced that the movement is steadily in that direction. The business of education is one of the largest in the community involving the expenditure of more money, the employment of more people, and the management of a more complex and involved enterprise than practically any other. It is natural to find, therefore, that wise boards of education have proceeded much in the same way as have directors of industries, retaining for themselves the determination of policies and the measurement of results. They have placed in the hands of a trained executive the actual operation of the business, asking him to advise as to what policies should be inaugurated and leaving him largely free to execute these policies and carry on the business.

> Potentially at least the most important officer in the employ of the people of any municipality today is the person who directs the organization and administration of its school system, and who supervises the instruction given therein. . . .
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> What the schools are in organization, administration, instruction, spirit and purpose, and the position which they occupy in the eyes of the community, they are largely as the result of the actions, labors, manliness, courage, clear vision, clean living, and common sense of the superintendent of schools.[7]

The superintendent is the head of the entire organization, exercising supervisory oversight of all departments. Real educational statesmanship and leadership of a high order are now necessary qualities for the superintendent with such an organization to direct. He is the chief executive officer of the board of education and must be supported by a staff made up of chiefs or heads of divisions directly responsible to him. It is only as the persons in these offices are thoroughly competent in their several fields and entirely loyal to their chief executive officer that efficiency can be developed. The board of education must recognize the superintendent as its chief executive officer, and it must cease to feel responsible for the execution of the policies which it adopts. The board must make it clear that all other members of the professional staff are responsible only to the superintendent of schools and not to the board of education. The superintendent's office then becomes the central office of the school system up to which and down from which authority, direction, and inspiration flow. He becomes the organizer and director of the schools in all of their different phases. He is the representative of the schools and all for which the schools stand before the community. He is

[7] Cubberley, *op. cit.*, p. 221 ff.

the eyes, ears, and brains of the board of education. He is supervisor of instruction in the schools. He is the leader, adviser, inspirer, and friend of the teacher. He has the interest of the children at heart. He has in mind the larger educational interests of the community as a whole.

Many studies have been made relative to the work of the superintendent of schools.[8] These studies group his duties under the following four headings: first, his duties as an organizer and planner; second, his duty as head teacher and supervisor of instruction; third, his duties as the executive officer of the board of education and as chief executive officer of the schools; and fourth, his duty as an interpreter of the schools to the community, and as builder of morale for his schools.

If these are the functions of a superintendent of schools, what differences exist in the discharge of his duties if he is superintendent of a village or consolidated school in contrast with a city system? May we emphasize that these differences are more seeming than real; regardless of the size of the system or its environmental location, the same functions general and technical must be discharged. His duties are the same; they differ only in complexity. The larger the system the more there is of each duty to perform; hence the necessity of adding trained assistants. In the smallest system the same duties have to be performed, but one individual carries on without assistants. I should like to emphasize the necessity of adequate training on the part of the one who is to administrate schools in a small community or in a consolidated school. In the largest system trained assistants may, in part at least, make up for the deficiencies and lack of training of the superintendent. In the small system he is required by the force of circumstances to discharge all of the duties of administration and supervision alone. Hence, if a superintendent is to be expert in a small situation, he must have a fundamental grasp of all problems which are to be performed.

His duties may be grouped under four large divisions: the relation of the superintendent to his community, the relation of the superintendent to his board of education, the relation of the superintendent to his teachers, and the relation of the superintendent to the pupils. In discharging the duties to each of these four groups, the superintendent must be aware of the problems which confront him, must be prepared to find adequate solutions, and must be efficient in promoting and developing harmonious co-operation. He must study his community, know intimately the ways in which the people of his

[8] *See* Ohlsen, *The Work of Boards of Education,* and Theisen, *The Board of Education.*

community make a living, must know and recognize their ideals, must be sympathetic with their problems, must have a vision of the place of the school in the development of the community, and must have an overpowering desire to cause the school to aid the community in every way possible. The successful superintendent must understand and fit into the environment of his school. His relations to the board, the teachers, and the pupils vary but little with like relations in other and larger centers. I more and more believe that the great necessary quality for the success of the superintendent in a consolidated school is that he understand the community setting, and that he have a firm belief that his work as superintendent of schools in such a community is the mightiest and most important in the world.

Classroom Films

By THOMAS E. FINEGAN[1]

THE AMERICAN PEOPLE INVEST ANNUALLY the sum of $2,400,000,000 in the maintenance of public schools. These schools are supported for a definite purpose. Their primary function is to train and instruct the twenty-eight million boys and girls who are attending them. The instruction which is provided in these schools is based upon programs which have been built, in theory at least, upon the economic and social conditions and needs of the country.

The quarter of a century through which we have just passed has been, on the whole, a period of great productivity and prosperity. The volume of steel, coal, copper, and petroleum produced within this period was more than twice the volume of the output of these products during the entire nineteenth century. Within the same period there has been an enormous increase in the value of all basic manufactured articles. New industrial enterprises of great magnitude have risen, as for instance, the motor industry, which had an output in 1929 in excess of $5,000,000,000. The wealth of the country has grown since 1900 from $89,000,000,000 to $375,000,000,000. Our economic income for the same year is estimated to have been $90,000,000,000. The nation expends annually only 2.4 per cent of this income for the support of education.

Because of this unprecedented prosperity, the great mass of American laborers has received the greatest compensation that has ever been paid the workers of a nation for a prolonged period of time. The burden of drudgery carried by laborers for years has been lightened, the hours of work decreased, and leisure time accordingly increased.

New agencies of service, such as the telephone, automobile, motion picture, and radio, have become common possessions. The use of oil, electricity, and power has greatly expanded, serving new purposes and increased numbers. These conditions, combined with the vast and complicated mechanisms introduced into our industrial and commercial activities, have radically changed our social and economic structure and the customs and habits of our people. New

[1] Director, Eastman Teaching Films, Inc., Rochester, New York.

standards of living have been acquired, and the general intellectual level of the country has been raised.

These conditions created a demand for improved and additional educational facilities. School programs and courses of study, classroom practice and procedure, and the scope and plan of the administration of public education have been practically revolutionized during the past twenty-five years. Still greater changes and progress in the work of the schools will take place within the next decade.

Industry and education bear reciprocal relations. Each may be of vital service to the other in the discharge of its respective obligations to the public. Education recognizes this situation, and industry appreciates these possibilities. Mr. Charles M. Schwab stated about a year ago that one of the five factors responsible for American prosperity was, "The most extensive free-school system in the world and the most general desire for education." The President's Committee on unemployment, including among its members Julius Klein, Daniel Willard, John J. Raskob, and Owen D. Young, in a report in 1930 on *Recent Economic Changes* stated that the educational systems are one of the first factors in maintaining economic stability.

The work of the school will not become more simple. Its obligations to society will become more important and increasingly more difficult. The period of time which school courses cover may not be extended. More and better work should be accomplished within the period of time which these courses now cover. This increased service and efficiency may be rendered if the schools are properly organized and equipped in personnel, buildings, laboratories, and apparatus.

A school does not differ in certain aspects from a modern bank, factory, or other business institution. The commercial and industrial organizations which turned out greatly increased volumes of goods and obtained large profits during the days of our great prosperity were equipped with all the modern implements of service adapted to the peculiar needs of their business.

The wealth and prosperity of the country, the methods and practices of industry and commerce, the days of financial adversity and unemployment, the crime and poverty of our times, and many other social and economic relations of mankind have created problems upon which the power and influence of the schools must be centered. Those agencies which will aid in clarifying and illuminating the basic aspects of these problems, and will assist in giving a clearer and more comprehensive understanding of their varied interests and aspects to the coming generations must be placed at the service of the teacher in his great task in the classroom.

We are now to consider the adaptability and value of one of the modern forces in education to classroom service. This agency is described on the program as "Visual Education." My part is limited to "Classroom Films," and I shall discuss the use of silent films only. Limiting my discussion to silent classroom films represents no adverse feeling, criticism, or prejudices in any way whatever toward any of the other types of visual aids now in use. Photographs, slides, stereographs, and sound or talking motion pictures have a place in present-day educational programs. In the interests of economical and efficient school administration each type of visual aids should be limited to the specific purposes for which they appear best adapted.

What I shall say in behalf of the use of classroom films will be based upon two experiences. One of these is the most extensive, thorough, and scientific experiment which has ever been conducted in American education. The other is an experience of several years in dealing specifically with various types of visual aids and of five years' work in developing silent classroom films and making a study of their value to the teaching service.

The experiment was the one sponsored by the Eastman Kodak Company to determine the value of films in classroom instruction. Twenty films were used in this experiment, ten in general science and ten in geography. They were prepared especially to cover a period of twelve weeks' instruction for specific courses of study in these subjects. These films were organized and developed by twenty-five teachers of university training and long and successful teaching experience. Two years were devoted to the preparation of these films.

When the films were completed they were turned over to one hundred teachers in twelve cities scattered throughout the country, from coast to coast, to be used in regular, daily classroom instruction. The great majority of these teachers had never used films in classroom work. Eleven thousand children participated in the experiment. All the regulations and requirements governing the conduct of standard experiments of this nature were applied to this experiment. The children were not picked from the student body; entire grades regularly enrolled in the schools were used. The areas of instruction for the experimental and control groups were identical. The conduct of the experiment and the evaluation of results were under the direction of Ben D. Wood, of Columbia University, and Frank N. Freeman, of the University of Chicago.

The group using the films made a decided gain over the group who were not permitted to use such films. At the end of the experiment the average score of the film group was higher than that of

the non-film group, although the non-film group was superior to the film group in intelligence and grade-placement, and made better scores on the tests given before the instruction began.

While this experiment was being carried on, Mr. Knowlton, of Yale, conducted a test using the Yale Chronicles of America in history classes over a wide range of territory. The results of this test were decidedly in favor of the film group. Several minor tests had previously been conducted, and in no instance had there been an adverse report on the use of films.

The type of films selected for classroom work, the general plan and method of using them, and the chief assistance they may render in reaching classroom objectives are vital factors to be considered in a program of film service in the schools. In the selection of films a teacher should keep constantly in mind the purpose of the classroom. The work of the classroom is to instruct. It is not to entertain or to amuse. This is not saying that there is no entertainment in classroom instruction. There is, however, a distinction between developing interest and providing entertainment. The dominant spirit of all classroom pursuits should be to develop right attitudes and to instruct. The devices and apparatus introduced in classroom service should be those which are adapted to, and aid in, emphasizing and promoting this spirit.

The story and the drama are factors of great power in educational processes, and especially with children of the lower grades. Where this form of instruction is resorted to, it should be presented by the masters in story-telling and in the dramatic field. But all the work of the schools should not be administered upon entertainment or dramatic lines. Films generally should not be made primarily to entertain children or to exert a dramatic power over them. They should be made with the intent to present accurate viewpoints and pictures of actual conditions representative of our social and economic life.

Walter Lippmann, writing on the influence of the American press in a recent issue of the *Yale Review* said, "When everything is dramatic, nothing after a while is dramatic; when everything is highly spiced, nothing after a while has much flavor; when everything is new and startling, the human mind just ceases to be startled." Mr. Lippmann further stated that the "objective, orderly, and comprehensive presentation of news is a far more successful type of journalism today than the dramatic, disorderly, episodic type." The views expressed by Mr. Lippmann on the type of news that is impressive and lasting applies with equal force to classroom films.

A classroom film should deal specifically with the subject-matter presented through printed text and by oral instruction in the conduct of class work. It should contain material which will be within the intellectual grasp of children of the age and grade for whose instruction it is intended. It should deal strictly with its main thesis and should seldom go into digressions or upon excursions into other aspects of the subject. These collateral affairs should be treated in films pertaining directly to their peculiar interests. It is not possible, nor is it necessary, to present in a film all the material bearing upon the subject to which it is related. The basic features only, essential to a fundamental knowledge of the subject, should be presented.

In dealing with subjects intended to develop correct attitudes and habits in life on the part of children, as for instance, in courses relating to health, films should be based on the positive or constructive practices which show the benefits derived from pursuing such courses instead of basing the films on negative or improper practices and the penalties resulting therefrom. There are certain scenes entirely proper from the ethical viewpoint which would shock or intimidate children of sensitive, nervous systems. All scenes which might produce undesirable mental reactions on the part of children should be avoided.

The scenes presented in a film should be limited, of course, to subjects, situations, and processes which it is proper and suitable to present to a class of children. The scenario should be based upon sound principles of the psychology of childhood which modern research has made available. The approach to a subject and its development by the film should conform to the practices of the classroom which are generally accepted by the teaching profession.

The continuity of a film should be clear and without a break. The wide gaps which may be allowable in a film for mature minds are not permissible in a classroom film for the instruction of children. The thought expressed in each picture should be so clear that the average child may properly interpret it. He should also be able to connect each scene with the one that follows; in other words, a film should be so constructed that a child will be able to read and interpret it as he would read and interpret the printed page. The continuity may sometimes be strengthened through the judicious use of titles. On the other hand, too many titles often interrupt the continuity of thought. They should not be used when the continuity may be expressed and the scenes properly interpreted without them. Titles should be short, clear, and expressive. A single idea should generally be expressed in each. This policy of using titles is in keeping with the sound teaching principle that a child should not be told that which

he may be able to see or discover for himself. A pupil should do his own thinking. A teacher should not do the thinking which the pupil should do for himself. Wood and Freeman in their report on the use of films said in this connection:

> The function of the teacher is to guide the pupil in discovering the explanations of the scenes which are presented in the film and to help him to understand those features which may not be clear. This does not mean that the teacher is always to tell the pupil everything which is not clear to him at first sight. It is frequently better practice to encourage the pupil to puzzle out the explanation of the picture himself.[2]

Films should be constructed so that they afford a sequence upon a common subject. Water is a subject that affords opportunities for the development of a series of films for instance, "The Water Cycle," "A Municipal Water Supply," "Purifying Water," and "Water Power." There is no agency through which the interrelated interests and processes of these subjects could be presented so accurately and effectively to a class of pupils as through the silent motion picture.

One of the problems of the classroom is to co-ordinate subjects in the curriculum in such a way that pupils may get a broader knowledge of these interrelated interests. For instance, "A Municipal Water Supply" is primarily a general science film. It has direct relation, however, to the subject of health, and is a fine example of a film in the field of civics. Through no agency, either still picture or text, could this correlation of interests be so explicitly shown as through the silent motion picture. Foods, light, electricity, textiles, bird life, and scores of other subjects in the curriculum lend themselves to this effective treatment in the use of films.

The most vitally essential element of a progressive program in the use of visual aids is a serious and professional attitude on the part of teachers and school authorities in the use of such aids. Showing pictures is not necessarily giving instruction. The use of the film should be well planned by the teacher. Its contents should be integrated with, and form a part of, the instruction. The film should generally be shown in the classroom. The occasional use of a film is of little value. Its use, to be effective, should be regular and general and a part of the classroom procedure.

The film should be shown at the time the subject to which it relates is considered in the classroom. The children are then in the atmosphere of the subject. To show them the film at some

[2] Wood, Ben D., and Freeman, Frank N. *Motion Pictures in the Classroom*, p. 223.

other time, or even to take them from the classroom to the general assembly to exhibit the film, is to take them out of the atmosphere of the subject treated, and results in a great loss of the value of the film as an aid in instruction. For the same reasons the rental of films is not a sound method of using them. Furthermore, the rental plan is not economical. The amount paid for a few rentals of a film is sufficient to purchase it for permanent use. If film service is to be made effective, films must be available for daily use in the classroom as maps, charts, textbooks, reference books, and scientific apparatus are now available for the purpose which they serve.

Professor Knowlton, of Yale, reports that a careful checking on the results of film showings in the auditorium and in the classroom, even though the same motivation was undertaken in each showing, reveals such an advantage of the classroom projection as to raise serious doubts about the investment of funds for auditorium use.

It is a matter of vital importance to the nation that he who earns his daily bread by the sweat of his brow shall have a proper appreciation of the service labor renders in any enterprise. A consciousness of the importance of such service by the one who renders it, no matter how menial it may be, dignifies labor and increases the self-respect of the man who performs it. This mental attitude of laboring men is essential to efficient service and to economic and social stability. The hopes and aspirations of mankind are increased by this feeling. It is even more important that the employer of labor shall have the same clear, liberal understanding of the service of labor to the country and the same mental attitude toward dignifying labor that the laborer himself should possess. To obtain this common viewpoint, labor and capital must have an understanding of the interdependence of mankind and of the interrelated interests of all industrial affairs. There is no agency through which a clearer and broader knowledge of these fundamental aspects of human relationship may be presented than by the use of a motion picture.

For instance, "Iron Ore to Pig Iron" is primarily a geography film. It may be used in general science. It is also a film on economics. It illustrates many features of social and economic life. Through this picture it can be shown that the men who mine this ore are creating a demand for labor in the field of transportation, in the iron and steel industry, in railroad construction and equipment, in coal mining, in the manufacture of machinery and equipment of many varieties, and in the building trades. In one reel, fifteen minutes, these common interrelated interests may be more clearly demonstrated in a silent motion picture than by words.

Furthermore, a person whose experience has given him knowledge of the power and influence of the film knows that each film affords opportunities for the translation of visual impressions into verbal forms of expression that carry a quality of meaning far richer and more integrated than the meanings acquired through verbal impressions alone. On this point the opinion of the men who conducted the Eastman experiment is most emphatic and conclusive. They say:

It is doubtful if any known technique of testing can reveal adequately this difference. It is probable that in the X groups *visual impressions* were consistently in advance of *facility for expression.* [The converse of this proposition follows, and that is, that in the non-film group] instructed more largely through verbal forms, facility in expression naturally has a tendency to out-run the acquisition of meanings based upon experience with reality.[3]

The service which a film renders a teacher in the arrangement of her material and in the presentation of a recitation is a matter of major importance. Teachers who have had large experience in using films in classroom work generally affirm that the films are a distinct advantage to them in making a thorough preparation for their daily work. They say that they are able to prepare a more logical presentation of a lesson with than without the film. It is their opinion that the film presents the basic elements of a lesson or a topic. In the selection of classroom material they are able to choose from a mass of available material which is most essentially related to the vital factors of the topic under consideration. They express the opinion that the film compels a teacher to conduct a more orderly and logical recitation, and that the film prevents her from digressing from the main points which should be clearly brought out.

The limitations of space necessarily prevent a discussion of all the direct results which it has been demonstrated may be achieved by the use of films prepared especially for teaching purposes. We can only name them. It is the general opinion of teachers who have used such films that they make a direct and distinct contribution to the usual objectives of good teaching, such as: the arousal and maintenance of interest; the development of originality and larger participation in self-activities; improving the quality of their reading material; increasing the ability to discuss topics and to write about them; enlarging the vocabulary; enriching personal experiences; correlating the work of the classroom with community life; developing the ability to concentrate mental activities; and many others.

[3] Wood and Freeman, *op. cit.*, p. 48.

These are among the most imperative and outstanding functions of the school.

One chief objection which has been advanced against the use of films in classroom work is that they leave the child in a passive state of mind and stimulate no intellectual effort on his part. In other words, the film might entertain the child, but it would not provoke an inquiry or a study on his part of the subject presented by the film. This is undoubtedly true of many films. It is true of the usual theatrical film. It will be true generally of films that have been constructed on the theory that all there is to be said upon a subject should be crowded into a film.

Films taken into the classroom should be built upon a plan which will arouse the child's mental powers and thereby stimulate his interest in the subject presented. The whole story should not be revealed. Such films will induce the child to ask questions, will lead him to make his own investigations, will aid him to become an accurate observer, will improve his descriptive ability, will cause him to make application of his knowledge to new experiences and real situations, and will create in his mind a desire for more enlightenment upon the subject filmed Thus intellectually stimulated he will seek the best companions which the youth of the land may cultivate—good books. The companionship of good books will exert a vital influence in the use of leisure time. The use of leisure time is not only a powerful agency in the building of character, it actually reveals one's character.

Teachers who used the films provided for the Eastman experiment testified that quantity of reading by pupils increased and the quality improved. This testimony was confirmed by administrative officers in the school system in touch with the experiment, and in other instances by the librarians. It was pointed out generally that among the values growing out of the use of films was the ability acquired in the use of reference books, in the selecting of material having most direct bearing upon a subject, in organizing material in logical form, and in creating a desire for reading material of a high order.

I wish to discuss one outstanding service of the silent film. One of the main objectives of the classroom is to develop the power to think. Sustained concentration is essential to clear thinking. A pupil who can concentrate all his mental powers on a subject upon which he is thinking will see more aspects of the problem, and see them more clearly and accurately. The power to concentrate makes a pupil more alert in reaching conclusions and aids him in forming a

sounder judgment. A pupil who acquires the habit of concentration will be able to co-ordinate all his mental powers and center them in an orderly, logical, and effective manner upon the problems he attacks. This quality of intellectual effort leads a pupil to the discovery of new processes and forces, and induces him to explore unknown fields. A pupil who possesses this mental capacity develops a spirit of enthusiasm and adventure. The constant practice of this type of work develops the emotions and imagination, cultivates the powers of observation, and encourages original and independent thought and action. A pupil who has acquired these intellectual qualities will use them more and more in his school work. He will use them in his attack upon problems which he meets out of the school. They will be one of his chief assets when he assumes responsibilities in life.

The silent film, if constructed upon pedagogical lines, will aid a teacher in his effort to train pupils to think. To illustrate this point, permit me to describe briefly the film on "Simple Machines." A scene on a school ground represents two boys seesawing. A twelve-foot board is balanced on a sawhorse. A boy sits on each end of the board. They begin to seesaw or teeter. The purpose of the scene is to develop the functioning of a lever. As the boys seesaw an arrow on which is printed the word "fulcrum" is gradually faded-in, with the arrow pointing to the place where the board balances on the sawhorse. The word "effort" is gradually faded-in in similar fashion at the end of the board occupied by the boy who is bringing his end to the ground, and the word "resistance" is gradually faded-in at the end of the board occupied by the boy who is going up. The meaning of the words *fulcrum*, *effort*, and *resistance* is readily developed.

More difficult scenes follow in the actual use of more complicated machines, in which the principle of the simple lever is applied. The words *fulcrum*, *effort*, and *resistance* are gradually faded-in at the proper time and place. The fading-in of labeled titles is a device that aids the child in his thinking. Each time that the word *fulcrum*, *effort*, or *resistance* is faded-in, the attention of the child is directed to that word. By this device the child is better able to concentrate. When a word is faded-in the child recognizes the point at once as one upon which emphasis is placed. There is no distraction to the child whatever; neither is there any confusion. There is a distinct gain in emphasis upon the particular thing to be considered in the picture; there is also assistance in concentration and in thinking power.

Scenes follow, illustrating the functioning of each of the additional five simple machines. Finally, scenes follow showing the

operation of some of the most complicated machines in modern use. These scenes clearly point out that the great, modern complicated mechanism of this machine age is constructed by the application of the principles of the six simple machines used in crude fashion even before the dawn of civilization. The functioning of all these simple machines and the application of the principles upon which they operate in modern mechanics are gradually and clearly developed.

The modern devices of the photographic art, the fade-in, the close-up, and animated drawings, make a silent film speak out, give directions, place emphasis, make explanations, and reveal a clear, comprehensive understanding of the most complicated achievements of science and invention because they compel the pupil to do his own thinking and enable him to concentrate and co-ordinate all his mental powers in his thinking processes. The technique in building silent pictures can make the film a powerful agency, in the hands of a skillful teacher, in developing the power to think and the ability to express with facility, verbally and in written form, what the student sees and understands.

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